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An Address.¹

TRADITION.

By R. G. C. DE CRESPIGNY,

Retiring President of the South Australian Branch of the British Medical Association.

It is a rule of this Branch that at the annual general meeting there shall be heard an address by the retiring president. Neither you nor I can escape from this rule, which is written down where all who read may see.

It is my intention on this occasion to review some of the traditions by which members of the medical profession order their proceedings.

The occasion of such an address as this seems a suitable one, since traditions are precisely defined as "laws and regulations handed down orally from one generation to another". Within any reputable body there must surely be such laws having a force at once binding and yet malleable, and whose intention must always be to guide along a path foreseen by generations of elder statesmen.

¹Delivered at the annual meeting of the South Australian Branch of the British Medical Association on June 28, 1961.

Before embarking upon the compilation of the words that comprise so public an utterance as this, being in the presence of elder statesmen and of one's peers, one necessarily searches among the writings of learned men. So it is that what has been said about doctors and their kind would seem to give a ready starting point. In a considerable review of apt sayings and aphorisms relating to doctors one finds, firstly, that a doctor was originally a "teacher—a learned man". It is evident therefore that the application of the title "doctor" to one who practises the art of medicine is in itself traditional. Secondly, opinions held of doctors practising medicine give rise to a doleful tally—15 against, one for, and four guardedly neutral. One pundit proclaims, for example, that "the best doctor is the one you run for and can't find", but it was a relief to discover that the notorious Dr. Fell, subject of a horrid little hate poem, was in fact a doctor of divinity. Finally, if the word "doctor" is used as a verb and applied to wine, dice or similar necessities, the meaning is far from flattering.

It would seem therefore that the traditions which doctors have, and of which we are justly proud, must have had their origins in a climate of philosophy hidden from lay members of the community. Very possibly the jealousy of those outside the ring induced a response within in terms of a determination to deal honourably, to be disciplined and to subjugate all lesser objectives to the great ones of promoting health and giving treatment and comfort to those who are sick.

A difficulty about the adoption of a high moral tone is that it tends to make others feel that they are being looked down upon.

Another aspect which is apt to be forgotten when doctors are grouped for the purpose of generalization is that they are human beings with the strengths and frailties common to all human beings, including the necessity for providing for their families and the ability to fall ill themselves. In their determination to uphold the established traditions of their calling they do indeed have need of an inner collective bond, and the framework of the laws within which we deal with ourselves and our patients is certainly necessary.

The result of it all is a series of paradoxes. Members of the lay public usually trust, and often revere, the doctors with whom they have personal contact. They appear to distrust and even to dislike what is opprobriously known as the organized medical profession. Yet the profession of medicine, through its record of service and honourable traditions, has achieved a high place in the pattern of society. In this respect the doctors have perhaps achieved something which most other groups have reason to envy.

Doctors tend to be individualistic; whether this is a characteristic of a person who adopts that profession or whether it is a result of it is perhaps doubtful. They are trained to sift and to weigh evidence and to relate symptoms and signs with learning and past experience, yet they are notoriously ingenuous when confronted with the real things of life such as financial perspicacity. There are, of course, notable exceptions to this generality.

Doctors are necessarily secretive, and it is possibly this characteristic, together with its corollary that they must know more than they say, which may give rise to much of the distrust of the profession in general. Yet, illogically, it stems from the most necessary of all professional tenets.

The patient's view of his doctor varies enormously. It is a wise practitioner who can read into an interview exactly what the patient wants. Does he come to be told all that a lay person can understand of his doubtful health, or does he come, as if to a tradesman, for the single purpose of being made better without interest as to the reason for the illness? Does he wish to know the facts as they appear so that he may gain comfort from knowledge, reserving to himself the right to accept or disregard advice—or is he prepared to do exactly what he is told, irrespective of rhyme or reason? I long remember how one of my colleagues, during an epidemic of colds, sent a man to bed until he was visited again. Two weeks later he was reminded of the long-forgotten patient by a telephone call reporting robust health for the previous 12 days, but increasing boredom with bed. I believe such patients to be somewhat less in evidence these days.

There is no doubt that even within the last generation there has been a great change in patients' minds as to their approach to doctors. Health and all the appurtenances thereto have become matters of increasing interest to the public at large, and the efforts of our profession are correspondingly subjected to closer scrutiny. Many mysteries are mysteries no longer, but are matters commonplace in journalistic paragraphs. Antibiotics are in the news; the *Staphylococcus aureus* features as the "golden death"; heart-lung machines and holes in the heart make headlines. No member of the public expects his doctor to look and think like the kindly old country practitioner of bygone days, and even Dr. Kildare might be found wanting in modern times. There are, without doubt, people who believe that it is wrong for any person to profit from the misfortune by illness of any other person and that, therefore, medical services must be provided by the State. Certainly, the enormous expense of learning and practice in some of the specialties in present times brings us face to face with a problem, as all here will appreciate.

In this changing climate of medical practice it is well for us to look to our traditions and see what message they have. In the first place, let us look at the objective.

Paraphrasing a part of the task set the Army Medical Services puts this concisely:

To promote health and prevent disease, and to provide for care and treatment of sick and wounded.

There can be no quarrel with this, and so long as the welfare of those who entrust themselves to our care remains the essence of our charter we are on sure ground.

Certainly most doctors would agree with the general terms of this objective. Some would go further, perhaps, and say that in the attainment of it they must be left unhindered by bureaucratic restriction or regulation, that their professional rights must be immutable and that their freedom to do what they consider best for the patient must not be compromised by any outside pressures, direct or obliquely implied. This, too, is sound enough, but there should always be a relation with the facts of life as they apply to the community at large. Bureaucratic regulation is necessary for many of the institutions which keep our social existence comfortable; professional rights must always be associated with professional responsibilities; and it is sometimes necessary to look at many facets of a patient's problems before knowing what is truly best for him. Some discipline may be necessary, of which self-discipline is usually the first component.

We may not advertise. Surely this is a comfort when one compares the intraprofessional relationships of doctors with the hurly-burly of competition amongst some of the lesser breeds without our law.

There are, of course, strict rules imposed by our Association which deal with advertising, but wrestling with their interpretation in the changing times which have made radio and television so universal makes it only too apparent that no written rule could cover all contingencies, and that only a traditional viewpoint, that makes a man submerge his very proper aspirations in the anonymity that collectively binds and sustains his colleagues, can show the way to rational conduct. It is in this field, certainly, that the medical profession is at odds with the news-hungry minions of a popular Press anxious to fill their publications with juicy tit-bits of human interest calibre.

It is also a possible reason why, as a profession, we are relatively inept in the field of what is known as public relations.

I have little complaint with these results of a declared policy, provided we can keep our affairs in order. I may be off key in saying so, but it seems that only when there is something to be hidden, or when money is wanted, are virtues proclaimed abroad.

A doctor in the course of his daily round makes contact with a very great number of people. If the impression he leaves with them does credit to the profession he follows, then the general feeling among the public will be of respect for that profession. It is unfortunately true that no amount of favourable notice given to the attainments and aspirations of any group of people, or of their learned societies, can have much meaning to a patient who feels he has had a raw deal from a single representative of that group. We cannot depend nearly so much on the most efficient of public relations officers as upon our individual colleagues.

On the matter of intraprofessional relationships—that is, medical ethics—much appears in writing in our rules and by-laws. Once again, it is virtually impossible to cover every situation by a written law, and it is through precept and tradition that guidance will come. Complaints are from time to time received by every Branch of the Association, and seldom can these be specifically related to any provision of the written code. I am usually reminded in such cases of the moral underlying an episode which occurred in this city a long time ago. Four respected citizens were playing whist when an argument erupted

about a matter which seemed impossible of solution by any interpretation of the rules. Such was the pertinacity of the protagonists that a letter was jointly written to the Whist Club in London seeking a decision. After many weeks, for such were conditions at that time, a short reply was received: "Whist is a game usually played amongst gentlemen." A similar code could well apply to many forms of social intercourse and, if it were so, life would often be pleasanter and less complicated.

We could do more in the fields of promoting health and in preventive medicine. It is traditional that the medical profession should take the lead in these matters, yet there is a tendency to leave a great deal of the work to State-controlled bodies or to voluntary organizations. We tend to observe their efforts with interest and criticize when prompted to do so, yet make insufficient personal effort to understand or alleviate some of the problems. One of the most poorly attended scientific meetings of this Branch was that held about two years ago to consider the matter of infant welfare in this State—yet the subject is surely an important one, and there has never been any noticeable lack of minor criticism of the work being done in this field—criticism which often enough is founded on lack of information. It is only too obvious that the chemists are cashing in on the failure of the medical profession to play its true part in promoting health, and by following the advice in their advertisements one would expect, at a price, to pursue a healthy career of remarkable longevity.

I am not sure what the answer is, but I have an idea that it is bound up with time—the time allowed by busy doctors to patients. So many patients consult their doctors only about the things thought to be of concern—namely, their ailments. They will not dare to take up more of the doctor's time in discussing other, vaguer anxieties, or in asking advice about how not to become ill, and are thus impelled to the purchase of some magical nostrum, worthless (except in money), over the druggist's counter.

I feel very strongly that this matter is an aspect of professional responsibility which is of great importance.

It is only by realizing, always, that a patient is a person—not a case, or an example of a pathological process—with a background of family, employment and heritage; and that all must be taken into consideration before the advice is given which the patient anxiously awaits; it is only by this realization that the doctor can give of his best. He must continually be looking behind the immediate problem that confronts him, and attempting to learn about the conditions that may have contributed to that problem, and his advice should, so far as is possible, embrace both therapy and prophylaxis. He will then be the teacher inferred by his title.

Preventive medicine in this context is the province of the doctor in his consulting room or at the bedside. In another sphere—that exemplified by immunization campaigns, whether conducted by State or local government authorities, or by industrial organizations—there is a growing tendency for a third party to intrude into the doctor-patient association. It is eminently desirable that the protection afforded by immunological means should be available to the community. However, it is unfortunate that this important aspect of medical care should so often be presented to the patient as a technical exercise, arranged by a department or a firm, in which the doctor appears as an anonymous figure plying a hypodermic syringe. To what extent it is possible to change the trend I do not know, but, unless the members of the profession, through their own efforts and their own organizations, can provide a comparable service, the proper expectation of the people that they should be immunologically protected will be fulfilled by means not fully under the control of the profession.

In the field of curative medicine we have great traditions founded on the honorary system, which makes it possible for the poor and unfortunate sick to benefit from the attention of the leaders of our profession at no cost. There

is little doubt that those who think about it honour us for this enormous gift of devotion and free service. However, as of so many charitable works, it may sometimes be thought that virtue is the sole (and only) reward. The poor these days are perhaps more frequently improvident than unfortunate, while the development of health insurance and the scale of fees now charged by those hospitals to which honorary service is given complicate the position further. I do not have to say more about these matters, which are, of course, constantly being thought about and discussed, and a solution to the problems involved will have to be found in due course. However, it would be improper to omit from any account of our traditions the one which typifies the most noble gift which a doctor may have in his power to bestow.

One must not forget either, that while the honorary system provided the essence of care in the great public hospitals, the general practitioner, too, was freely giving an equivalent service to the poor and needy among his patients.

It is an unfortunate truth that few people are disliked more than those to whom a debt is owed, and it may be argued that doctors have been, and are being, shamelessly exploited. Nevertheless, when complaints about concessional rates and honorary service are heard, there should always be a moment of thought about the benefits which a great tradition has brought to our profession as a whole, and these should be balanced against the risk of exploitation and material loss.

Loyalty to the profession of medicine and to the associations formed within that profession is inherent in our creed. This is a tradition which has the advantages both of unimpeachable moral value and utilitarian application. Quite the most interesting development to us that is taking place at present is the formation of the Australian Medical Association. The conception seems simple enough—that with the growth of Australia and its emergence into nationhood, and with the numerical strength of our members, we should have our own national association.

The performance of the exercise is a procedure of some complexity, though there is no doubt that it will be effected, and in due course this State will probably be the host to a Federal assembly of delegates. The hope and expectation is that the profession will emerge able to speak with one voice on its own behalf—in the establishment of the traditions which it considers to be good, and in the negotiations which are constantly necessary with other authorities.

The encroachment of governmental control, which so often seems to us to cut across much of what we conceive to be our duties towards our neighbours, the patients, and which, too, can appear to direct our actions to the detriment of our chosen methods of working, can only be kept in proper perspective if we have, and give our loyalty to, skilled, well-informed and determined representatives. We must be loyal in our support and in our understanding of their difficulties and, indeed, the need for occasional compromise. If, as a profession, we declare that there shall be no nationalization of medicine, then loyalty demands that individually we shall go on declaring the same thing. It troubles me not a little to hear, as I have, senior people of our number say, with a fatalistic shrug, that of course nationalization will come. If enough doctors say so, come it will, and therein lies a very great danger.

It is, I believe, true that relatively fewer young men are entering general practice as the years go by. Certainly there seem to be ever-increasing opportunities for them to take salaried positions, but might it be that loose talk of the supposed inevitability of State-controlled practice is preventing some from capitalizing themselves in private practice. To my mind, if general practice as we have known it in this country in the past should be subjected to nationalization, then much of the strength of the profession will have been lost. We have no room for, nor should we accept, any views contrary to what we believe to be right.

If we respond to suggestions that the practice of medicine should be State-controlled by positive and forceful rejection of the idea, we will achieve a great deal, because it will at least be evident that we have firm views on the subject. However, it is not sufficient to have firm views that cannot be supported by equally strong evidence of their validity. The principal differences between the adequate but impersonal service given by a socialized system of medicine, and that provided by private individuals with similar objectives, seeing patients as people, and acting in accordance with the high standards and traditions inherent in a professional body, but not found in books and regulations, can always be looked for in the attitude of the patients and the sense of integrity of the doctors.

The essential factor is not a materialistic one, for the same individuals would conduct the work in either instance, but is, rather, the more ephemeral question of person-to-person relationship. The patient who can approach his doctor in the sure knowledge that, within his capabilities, that doctor will advise and treat him uninfluenced by any other agency, or any control other than that exerted by the sound traditions of an honourable calling, must surely do so with a fair measure of the confidence so necessary for the success of the art of medicine.

Here then are some of the fundamental principles which must guide us in our work: (i) Freedom of action with self-imposed discipline; (ii) discretion and reticence; (iii) courtesy and honesty in personal relationships; (iv) loyalty; (v) service to all humanity, with dedication to the purpose of doing what is considered to be most beneficial for all who seek relief. Traditions, though they cannot take the place of sound training and basic wisdom, give much to the application of those intellectual faculties. Because they should properly be spoken rather than written, they will continue to be imparted by personal association rather than through books or manuals.

If much of what I have said seems to be an oversimplification and even obvious, I offer few apologies. There is a need these days to review the simple things every now and then, and to try, if possible, to make sure that all actions taken stem from a clear concept of what is basically sound. Few problems should be too difficult if tackled in this manner, and many a decision, later repented, would not have been made if first things had been considered first.

I have addressed you on this subject, not because there is anything new to say—rather the contrary—but because by recapitulation of some of the attributes that make a good practitioner of medicine it may be possible to procure a better one.

In conclusion, one can but repeat the words of St. Paul—chosen because he at least was a man with some affection for doctors—who, when writing to the Thessalonians, at the time under some threat of persecution, said simply:

Therefore, brethren, stand fast, and hold the traditions which ye have been taught. . . .

INCIDENCE OF HEART DISEASE IN A NATIVE HOSPITAL OF PAPUA.

By R. BAENES,

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Papua—New Guinea.

Saiho Native Hospital, in the northern district of Papua, is the base hospital for approximately 19,000 people served by 26 aid posts. It also draws from smaller hospitals at Tufi, Gona, Wanigela, Oro Bay and Sasembata, run either by a European medical assistant or a trained Anglican mission sister. These latter hospitals cover another 10,000 natives approximately.

After seven years in a South Australian country practice, where quite a proportion of my patients suffered from cardio-vascular disease of one kind or another, it has constantly amazed me how extremely small is the number of such cases seen at Saiho. I would like to emphasize here that minor degrees of heart disease must have been missed, and, of course, many patients have died untreated in the villages. However, patients with gross cardiac disease seen on patrol have been referred back to hospital for investigation, and the whole district has been patrolled twice in most places and once in the rest during the twelve months in question.

All patients admitted to Saiho Native Hospital are examined, certainly not exhaustively, as time and staff do not permit this; but the temperature and pulse are taken, the chest is auscultated, the abdomen is palpated (mostly for spleen size) and limbs are examined for scabies, yaws, tropical ulcers or oedema of filaria, nephritis and heart disease. No attempt has been made to include systolic murmurs unless other signs of cardiac disease are present.

In the twelve months from January 1 to December 31, 1960, 3527 patients were admitted to Saiho, with an average daily strength of 106.26; of these 46 were tuberculous or static patients, in for a two-year term in most cases.

The reasons for admission are shown in Table I; 0.3% of admissions are seen to be for cardio-vascular disease.

It is interesting to compare these figures with those quoted for the Royal Perth Hospital from July, 1956, to June, 1959, inclusive. Here Saint (1960) states that about 200 of the 600 beds are occupied by medical patients. Of the medical patients, 29% have been admitted for cardio-vascular disease.

If medical in-patients are allowed as being approximately one-third of the total, then cardio-vascular disease accounted for nearly 10% of the total patients admitted, as against 0.3% for Saiho. The actual figure for in-patient cardio-vascular disease would probably be much higher in Perth if we considered the relatively long time during which such patients are treated in hospital, as compared with most of those with surgical, gynaecological and orthopaedic conditions.

Deaths during the period in question at Saiho numbered 32, and the causes are shown in Table II.

Again it is interesting to compare the figures for the Perth General Hospital. Here the proportion of deaths in the medical wards was just under 50% from heart disease and cerebro-vascular accidents combined. Of the 32 deaths at Saiho, only one (fractured skull) could be considered non-medical; so there were two deaths from heart disease amongst the 31 deaths from medical causes, or just over 6% of the total. This is almost identical with the figures quoted by Crotty and Webb (1960) for the mortality in Northern Territory aborigines. They give the causes of deaths of 175 aborigines, including 108 post-mortem investigations. Of these 175, nine were from rheumatic heart disease, arteriosclerosis, bacterial endocarditis or coronary occlusion, and two deaths were from cerebral haemorrhage. This means 11 of 175, or a death rate of 6.3% from cardio-vascular disease.

The diagnosed cases of cardio-vascular disease for this period at Saiho were 11 in number, or 0.3% of the total admissions. These cases are shown in Table III.

Reports of Cases.

CASE I.—A female child, aged approximately 15 years, was admitted to hospital in some respiratory distress, with a history of pain in the chest and abdomen for a few days only. She had a heaving apex beat, a loud diastolic murmur and a pulse rate of 140 per minute; the liver was large and tender, and the lung bases were moist. In spite of rest, digoxin, mersalyl, iron and salicylates, she became more dyspnoeic, and died in two weeks of acute rheumatic fever.

CASE II.—A male, aged approximately 27 years, was admitted to hospital with a history of fever, swelling of the knees and ankles and general weakness. On examination, he had a pulse rate of 110 per minute and his blood pressure

was 105/70 mm. of mercury; his heart beat was regular, with no bruits on auscultation. X-ray examination showed a greatly enlarged heart. He settled down with rest, penicillin, iron and salicylates, and was discharged from hospital after two months with minimal clinical signs; but his heart was still enlarged radiologically, although his exercise tolerance was good. Apparently he had rheumatic fever with myocardial rather than valvular damage.

TABLE I.
Admissions, January to December, 1960.

Disease.	Number of Cases.
Malaria	543
Respiratory complaints, including pulmonary tuberculosis	351
Ulcers, sores, scabies, impetigo	330
Injuries	190
Infectious diseases	190
Enteritis	102
Cardio-vascular diseases	11
Others	1810
Total	3527

CASE III.—A female child, aged 10 years, was admitted to hospital with fever, swelling of both knees and a rapid pulse. No obvious cardiac murmur was present, and the heart not enlarged clinically or in an antero-posterior X-ray film. Her pulse rate was 110 per minute and regular, and the haemoglobin value was 64% (Sahli). She was treated with rest, salicylates and iron. The pyrexia settled in a few days, the pulse in two weeks, and the joint swellings at about the same time. She was discharged from hospital, well, one month later, without any joint or cardiac signs.

TABLE II.
Causes of Death, January to December, 1960.

Disease.	Number of Cases.
Cerebral malaria	6
Meningitis	5
Pneumonia	5
Pulmonary tuberculosis	4
Pulmonary tuberculosis and congestive cardiac failure (Case VII)	1
Cirrhosis of the liver	2
Infective hepatitis	1
Anaemia	2
Chronic nephritis	1
Status epilepticus	1
Fractured skull	1
Leukemia	1
Gastro-enteritis	1
Rheumatic carditis (Case I)	1
Total	32

CASE IV.—A male patient, aged 14 years, was admitted to hospital with pyrexia, weakness, loss of weight, and pain and swelling of both knees and ankles. The heart was clinically normal; his pulse rate was 140 per minute, his blood pressure 90/60 mm. of mercury, his haemoglobin value 55% and his erythrocyte sedimentation rate 132 mm. in one hour; both knees were swollen and tender. He improved slowly with rest, salicylates, iron and penicillin. X-ray examination shows no cardiac enlargement, and he has not developed any obvious murmurs. He is still undergoing treatment at the time of writing, but is improving slowly.

CASE V.—A girl, aged approximately 10 years, was admitted to hospital with a high fever; she was delirious and had a slightly stiff neck. She was diagnosed as suffering from cerebral malaria, and in fact examination of a blood smear showed malignant tertian malaria. She was treated with chloroquine given intramuscularly, followed by "Camoquine" and aspirin tablets, and she did seem to improve. However, her temperature remained in the region of 100° to 101° F. every day, and no cause could be found on a close physical examination. The urine was normal.

At this stage she complained of upper abdominal pain and pains in both legs, and hepatitis was suspected, as many cases had occurred at this time. After one week she developed a painful swelling of the right first metacarpophalangeal joint, the right ankle and the left knee.

Rheumatic fever was tentatively diagnosed. On about the tenth day a soft diastolic murmur developed just above and inside the apex, and I thought that a definite diagnosis of rheumatic fever could be made.

Her pulse rate was consistently in the region of 110 to 120 per minute and always regular. Pain in the upper abdomen was apparently from some liver congestion. There were no signs of cardiac failure, and clinically the heart was not enlarged. The blood pressure varied from 90/50 to 90/60 mm. of mercury. The erythrocyte sedimentation rate was 140 per minute, the haemoglobin value was 85%, and X-ray examination showed moderate heart enlargement. She is still in hospital at the time of writing, and still has joint and cardiac signs.

TABLE III.
Cases of Heart Disease, January to December, 1960.

Disease.	Number of Cases.
Rheumatic fever	5 (Cases I to V)
Congestive cardiac failure from severe lung disease	2 (Cases VI and VII)
Myocardial ischemia	1 (Case VIII)
Congenital heart disease	1 (Case IX)
Subacute bacterial endocarditis	1 (Case X)
Beriberi	1 (Case XI)
Total	11

CASE VI.—A female, aged approximately 57 years, was admitted to hospital with breathlessness, cough, oedema of the ankles and slight cyanosis. She had severe bronchitis, an enlarged heart but no bruits, a blood pressure of 105/70 mm. of mercury, and gross oedema of the legs. She improved with penicillin, expectorants, digoxin and mersalyl. She was discharged from hospital with some degree of breathlessness, but no obvious oedema of her ankles. She had congestive cardiac failure from chronic lung disease.

CASE VII.—A male, aged 32 years approximately, was in hospital with bilateral severe pulmonary tuberculosis. In spite of anti-tuberculosis treatment he became increasingly dyspnoeic and developed ascites and oedema of the legs, and the X-ray film showed a large heart allied to the severe bilateral tuberculosis. He passed into severe congestive cardiac failure, and died from a combination of chronic severe lung disease and progressive heart failure.

CASE VIII.—A male, aged 42 years approximately, was admitted to hospital with a history of chest pains and shortness of breath of four months' duration. He was found to have a large heart on clinical and X-ray examination. The heart beat was irregularly irregular, and there was a pulse deficit of 30 in 140. His blood pressure was 100 to 120/50 to 70 mm. of mercury. There were moist lung bases, a large, tender liver and oedema of his ankles. He settled down on rest, digoxin, mersalyl, iron and vitamins. The chest pain was vague, and was not described as a sudden severe attack, but as a "tightness" for some months. In the absence of an electrocardiogram, the auricular fibrillation was considered to have resulted either from coronary disease or from rheumatic carditis.

CASE IX.—A female, aged two years, was admitted to hospital for failure to thrive. She had a roaring to-and-fro murmur, and a grossly enlarged cardiac shadow was seen in an X-ray film of the chest. There was no history of previous severe illness, and obviously she had a congenital heart lesion.

CASE X.—A female, aged approximately 27 years, was admitted to hospital with oedema of the ankles, breathlessness and fever. She was four months pregnant. Her urine was normal, and physical examination revealed no cardiac abnormality. The lungs were clear, and her blood pressure was 90/60 mm. of mercury. She rapidly grew worse. Her temperature rose to 103° to 104° F., and she had severe rigors and looked very ill. A loud systolic bruit developed over the aortic area, but was audible as far down as the apex, and a precordial thrill could be elicited. Both lung bases were moist, and an X-ray film showed cardiac enlargement and congestion of both lung fields. A provisional diagnosis of subacute bacterial endocarditis was made, and large doses of crystalline penicillin were started. She improved within a few days, the fever settled and she looked less toxæmic, and the lungs cleared. She is still in hospital, and still has a soft systolic bruit, but no thrill.

CASE XI.—A female, aged approximately 32 years, was admitted to hospital with breathlessness and swelling of the legs. On examination, she had a pulse rate of 112 per minute. Her heart sounds were regular with no bruits, and her heart was not obviously enlarged. The lung bases were moist, the blood pressure was 105/70 mm. of mercury, the haemoglobin value was 50% (Sahli), and there was obvious oedema of both legs. Examination of a smear for filariae gave negative results, and an X-ray film of the chest showed an enlarged heart shadow. She was treated with iron, rest, mersalyl injections and vitamin B injections, and she slowly improved and the oedema disappeared. Her condition was most probably wet beriberi.

Discussion.

I make no pretence to account for the low incidence of heart disease in hospital in-patients, although the following factors may have an influence.

1. The native diet is almost exclusively vegetarian—taro, yams, sweet potato, cabbage, papaw, banana and pineapple, supplemented by peanuts, coconut flesh and the occasional tomato and mango. Meat is a rarity, as, although pigs are universally owned, they are largely kept for prestige value and slaughtered in large numbers at feasts and "sing-sings". Very minor amounts of meat, such as pigeon, parrot and the occasional bush rat, wallaby and cuss-cuss, are eaten, as game is very scarce, and very cunning. It can be seen that large amounts of starch are consumed in order to get an adequate protein intake as well, but frank malnutrition is rare. Only in Case XI above have I seen beriberi. Fat is obtained as vegetable oils.

2. The village existence is not excessively arduous, but it is an active physical life. There are no sedentary jobs.

3. The stresses of our civilized society are much less evident—no wireless sets to tell of international tensions, no cars to rush about in, no clocks to watch anxiously.

4. Obesity as we know it is non-existent.

5. The average blood pressure of the Orokaian adult (aged 16 years and above) taken on 200 successive admissions was 92/64 mm. of mercury. The highest recorded figure was 120/90 mm. of mercury and the lowest 70/48 (excluding cases of severe shock). These blood pressure recordings are lower than the figures given by Whyte (1958) for New Guinea natives of the Highlands. However, he does emphasize that the blood pressure does not rise with age, as is the case in most Europeans.

6. Tobacco is almost universally smoked by adults, either as native twist sold by trade stores or as village leaf. An average intake of 2 oz. per week would be a generous estimate, however, and in most it would be less.

7. The expectancy of life can again only be very roughly guessed in our present stage of vital statistical recording, but it would be less than 50 years. Hence, fewer persons enter the arteriosclerotic age group.

8. Most old people prefer to die in the village, and many hospital patients will ask to go home if they think they are going to die.

Summary.

1. In 3527 admissions to Saiho Native Hospital with an average in-patient roll of 106.26, there were only 11 frank cases of cardio-vascular disease. This contrasts markedly with an Australian country practice, in which a large proportion (unfortunately no figures are available for direct comparison) were of cardio-vascular origin.

2. No recognized case of coronary occlusion or coronary insufficiency has been seen at Saiho, as evidenced by chest, neck or arm pain, shock, angina of effort or rapid cardiac failure.

3. Two hundred consecutive blood pressure recordings were made, and the absence of hypertension as we know it was noted.

4. The possible correlation of the following factors is noted: (a) a diet of particularly low animal fat and protein intake; (b) the tempo of life—physically active,

with few tensions as we know them; (c) the lack of obesity; (d) the low average blood pressures.

Conclusions.

Further work on blood cholesterol levels along the lines of Whyte (1958) in the New Guinea Highlands, and perhaps a mass electrocardiographic survey to determine the existence of coronary disease, would seem worth while. Atheroma and arteriosclerotic changes must occur, even though they are obviously much less than in the Australian adult.

Is this resistance to atheroma inherited, dietary, or due to some protective substance present in the staple food? Atheroma and its sequelae—coronary disease and hypertension—are a very real problem amongst Europeans. The lower incidence amongst Papuans would surely bear closer investigation and research.

Acknowledgement.

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STAPHYLOCOCCAL SURGICAL WOUND INFECTIONS, WITH PARTICULAR REFERENCE TO SKIN FLORA, AND A COMPARISON OF TWO PRE-OPERATIVE SKIN PREPARATIONS.

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THERE are numerous publications about the occurrence of post-operative wound infection due to *Staphylococcus aureus* (Howe, 1954) and the serious results of such infections (Hassal and Rountree, 1959). Rountree *et alii* (1960) found an infection rate of 14% in 198 clean surgical wounds. Weinstein (1959) showed a relationship between nasal carriage of staphylococci by patients and the subsequent development of wound infections. It has been suggested that this may be because organisms enter the blood-stream via abrasions in the trachea (Walter, 1958); the author thought that a patient might infect himself by pre-operative contamination of the skin at the site of operation. This possibility as a mode of transfer of organisms from nose to wound has been investigated during a ward trial of two pre-operative skin preparations.

The ward trial was conducted to determine the relative effectiveness of alkylidimethylbenzylammonium chloride, supplied as "Zephiran", in spirit, and "pHisoHex" as pre-operative skin preparations. "pHisoHex" is a creamy emulsion containing an anionic detergent, entsufon, and 3% hexachlorophene. Work done in our own theatre (Jarvis, 1960) and elsewhere (Smylie *et alii*, 1959) has shown that "pHisoHex" used for the pre-operative scrub caused a marked reduction in the number of organisms isolated from surgeons' hands. "Zephiran" was used as a 1% solution of "Zephiran" in 70% alcohol, which is the normal skin preparation in this hospital. Gardner (1948) carried out skin-disinfection tests with *Pseudomonas*

pyocane as an indicator organism, and using "Zephiran" at levels of 25% to 100%. It was thought that it would be better to use naturally occurring skin organisms rather than artificially introduced organisms, since naturally occurring organisms would be more difficult to remove, and might in fact be colonizing the skin instead of contaminating it.

Trial Planning and Bacteriological Methods.

Nasal swabs, skin swabs and wound swabs were taken from all patients in two general surgical wards who underwent clean surgical operations, or operations which were clean but liable to contamination owing to the site of the operation. Patients were excluded from the trial if they were admitted for emergency operations, or if swabs were not taken owing to error. The two wards are identical in construction, and cater for similar types of patients. Differences in staff and techniques were compensated for by alternating the skin preparations weekly, so that at any one time one ward was using "pHisoHex" and the other was using "Zephiran". Each patient had the same preparation in the theatre as in the ward.

Skin Preparations.

"pHisoHex".—"pHisoHex" was used according to the manufacturers' instructions. With the aid of sterile gauze, a lather was developed on the operation area of the patient's skin with "pHisoHex" and sterile warm water. After one and a half minutes of light scrubbing, the lather was rinsed off with sterile warm water, more "pHisoHex" was applied and the skin was scrubbed for four minutes. The skin was rinsed and dried and the area wrapped in a sterile guard. The patient was prepared half an hour to an hour and a half before being taken to the theatre. In the theatre the guard was removed, and the patient's skin was swabbed with a soapy solution of "pHisoHex" in sterile warm water.

"Zephiran".—The operation area was painted with "Zephiran" solution by means of a sterile swab, and was then covered as described above. In the theatre the guard was removed and the skin was repainted with "Zephiran".

Swabs.

Nasal and skin swabs were taken in the ward on the morning of the operation, before the patient was prepared for the theatre. The patient had been shaved the night before, and had generally had a hot bath on the morning of the operation. Nasal swabs were moistened in 10 ml. of nutrient broth containing 10% salt, rotated three times in the nostril and replaced in the broth. This was done for each nostril. For skin swabs, similarly moistened swabs were rubbed along the area where the incision was to be made and replaced in the broth.

Swabs after skin preparation were taken in the theatre in the manner described above, along the line of incision, just before the surgeon commenced operating. This allowed two or three minutes for the skin to dry before the swab was taken. The broth used for these swabs contained an antagonist for the skin preparation. For "pHisoHex", Tween 80 (1%) was used, since this has already been shown to be effective (Jarvis, 1960). For "Zephiran", 0.3 gramme of lecithin and 2.02 ml. of Tween 80 per 100 ml. of broth were used. By dilution tests as for Tween 80, it was shown that in nutrient broth staphylococci are inhibited by "Zephiran" at a concentration of 1:1,600,000. In the presence of 0.3% lecithin and 2.02% Tween 80, growth of staphylococci was obtained in broth containing "Zephiran" at a concentration of 1:6000. It was shown also that the level of "Zephiran" present in the broths from 10 pre-operation swabs ranged from 1:400,000 to 1:1,000,000. The first time each wound was dressed after the operation, a wound swab was taken with a moistened swab and salt broth as before. A wound was regarded as infected if there was any visible pus. No further swabs were taken from the wound unless it developed a clinical infection, in which case a swab was taken.

All broths were incubated at 37°C. for 24 hours, and plated on blood agar. Coagulase-positive staphylococci were phage typed. The following phages were used:

Group I	29, 52, 52A, 79, 80
Group II	3A, 3B, 3C, 55, 71
Group III	42E, 6, 7, 47, 53, 54, 75, 77
Group IV	42D
Miscellaneous	187, 81, A77

Throughout this paper, "staphylococci" refers to coagulase-positive *Staph. aureus*.

The χ -square statistic was used to test the relationship between nose and skin organisms, skin organisms and wound infections, and skin preparations and resultant skin flora.

Results.

Nose and Skin Swabs.

Of 196 patients from whom nose and skin swabs were taken in the ward before preparation for the operating theatre, 65 (33.2%) were nasal carriers of staphylococci. Of these 196 patients, 26 (13.3%) had staphylococci on the skin at the site of operation. Table I indicates the phage types of these staphylococci. There was no marked predominance of any one phage type. These figures can be compared with the result of nasal swabs taken in the admission office from 50 patients admitted for cold surgery after the ward trial was completed. Of these patients, 28% were carriers of staphylococci on their admission. This figure is not significantly lower than the number of patients who were nasal carriers before their admission to the theatre ($P = 0.60$).

Table II shows the relationship between nasal and skin staphylococci. There is a highly significant relationship between the isolation of staphylococci from the patient's skin and nose.

Skin and Wound Swabs.

Pre-operative nose and skin swabs and wound swabs were taken from 145 patients. Table III shows the classification of these operations. It also shows the infection rates for clean operations (Class A), and for operations which were clean but liable to potential contamination owing to the site of the operation (Class B). There were 115 operations in Class A, of which 9.6% of wounds were infected. There were 30 operations in Class B, of which 6% of wounds were infected. The difference between these two infection rates is not statistically significant ($P = 0.20$).

During the period of the trial, 17 patients (11.7%) from whom swabs were taken acquired staphylococcal wound infections. All these were clinical infections—that is, pus was evident. In seven of these cases it could be assumed that the infection was acquired at the time of operation; six of these seven wounds were found to be infected the first time the dressing was opened. Three of these became apparent two days, two of them four days and one of them five days after the operation. The remaining theatre infection became evident when the wound ruptured 20 days after operation, and was obviously deep-seated. Of the 10 infections which were assumed to be acquired in the ward, none appeared to be deep-seated infections, and none became apparent until the wound had been dressed at least four times. They became evident, 4, 7, 9, 9, 11, 16, 17, 17, 17, and 30 days after operation. Each of these patients had a "negative" wound the first time the dressing was removed.

Table IV gives the findings in swabs from the seven patients who had theatre-acquired infections, phage types being given when staphylococci were isolated. In four of these seven cases, the same strain of staphylococcus was isolated from the patient's skin in the ward as from the wound.

Table V shows the relationship between the occurrence of staphylococci on the skin and the development of theatre infections. Four of the 16 patients from whom staphylococci were isolated from the skin developed infections, whereas three of the 129 patients from whom skin staphylococci were not isolated developed infections. These figures show a statistically significant relationship between skin staphylococci and theatre-acquired wound infections. Using Fisher's exact method for dealing with 2×2 contingency tables with small expected numbers, it is found that $P = 0.003$, which is highly significant.

Comparison of "pHisoHex" and "Zephiran".

Swabs were taken from 144 patients before and after skin preparation. Twenty-two of the 76 swabs taken after "pHisoHex" showed no growth; 32 of 68 swabs taken after

TABLE I.
Staphylococci Isolated from Patients.

Source.	Group I.	Group II.	Group III.	Group IV.	80/81.	Miscellaneous.	Non-Typable. ¹	Total.	No Swab Taken.
Nose	10	5	12	0	7	11	20	65	196
Skin	3	2	6	0	0	7	8	26	196

¹ Typed at R.T.D. only.

"Zephiran" showed no growth. The difference between these two results is significant, although not highly so ($P=0.04$).

Gram-positive sporing rods only were isolated from many of the swabs showing growth after skin preparation. Since it is not expected that either of these cold disinfectants will kill sporing organisms, Gram-positive rods could be classed with "no growth" as in Table VI. After "pHisoHex" preparation, 28 of the 76 swabs taken showed no growth

between the number of patients who were found to be nasal carriers on admission to hospital and those found to be carriers before being taken to the operating theatre, and since most patients were admitted to hospital less than 24 hours before operation, it is unlikely that nasal staphylococci were acquired in the ward.

TABLE IV.
Swabs from Patients Who Acquired Theatre Infections.

Case Number.	Nose Swab.	Skin Swab Before Skin Preparation.	Wound Swab.	Operation.
I	52/52A/80/81	75/77/A77	75/77/A77	Laparotomy.
II	75/77/A77	75/77/A77	75/77/A77	Varicose veins stripping.
III	Negative re-sult.	52/52A	52/52A	Excision of melanoma.
IV	81	81	81	Abdomino-perineal resection.
V	80/81	Negative re-sult.	80/81	Thyroidectomy.
VI	Non-typable.	Negative re-sult.	Group III.	Varicose veins stripping.
VII	Negative re-sult.	Negative re-sult.	Non-typable.	Anterior resection.

TABLE II.
Number of Patients with Positive Findings from Skin and Nose Swabs.

Skin Findings.	Nose Findings.		
	Positive. ¹	Negative.	Total.
Positive ..	15	9	24
Negative ..	48	122	170

¹ "Positive" indicates the isolation of staphylococci. Two cases in which both swabs gave positive findings but yielded different strains are omitted. χ^2 (corrected for 1 d.f.=10.00; $P=0.002$).

or Gram-positive rods only; 44 of the 68 swabs taken after "Zephiran" come into this category. The difference between these two results is highly significant ($P=0.002$).

The overall infection rate of 11.7% was similar to the infection rate for all operations in this hospital during a recent period of 12 months. Of the 17 infections

TABLE III.
Operations.

Class.	Operation.	Number Performed.	Number Infected.
A	Varicose veins	27	2
	Hernia	22	1
	Clean abdominal	40	6
	Thyroid	8	1
	B. cast	7	—
	Miscellaneous	11	1
Total		115	11 (9.6%)
B	Prostatectomy	7	1
	Abdominal	5	0
	Renal	8	1
	Open bowel	7	2
	Abdomino-perineal	2	1
	Miscellaneous	1	1
Total		30	6 (20%)
Total A and B		145	17 (11.7%)

Of the 144 cases in which skin swabs were taken before and after skin preparation, in 18 (12.5%) staphylococci were grown before skin preparation, and in 10 (6.95%) staphylococci were grown after skin preparation (in seven after "pHisoHex" and in three after "Zephiran").

Discussion.

In carrying out this work, an attempt has been made to determine the occurrence and origin of skin staphylococci and the role they play in post-operative wound infection. The high correlation between the isolation of skin and nasal staphylococci indicates that in many instances the patient's nose may have been the source of his skin organism. Since there is no significant difference

TABLE V.
Relationship of Theatre Infections and Skin Staphylococci.¹

Skin Findings.	Wound Infected.	Wound Not Infected.	Total.
Positive ..	4	12	16
Negative ..	3	126	129

¹ "Positive" in relation to skin indicates the isolation of staphylococci of the same strain as that causing the wound infection. By Fisher's exact method for small expected numbers, $P=0.003$.

investigated, seven were regarded as theatre infections on the bases described above. In four of these the organism causing the infection was isolated from the skin before

TABLE VI.
Results of Skin Swabs Taken after Skin Preparation.¹

Preparation.	Growth Other than Gram-Positive Rods.	Gram-Positive Rods or No Growth.	Total.
"pHisoHex" ..	48	28	76
"Zephiran" ..	24	44	68
Total ..	72	72	144

¹ χ^2 corrected for 1 d.f.=10.059. $P=0.002$.

operation. Weinstein (1959) found that nasal carriage of staphylococci was associated with skin staphylococci at the site of operation, and that there was a highly significant relationship between skin staphylococci and wound infection. This suggests that the mode of transfer of organisms from nose to wound may be via the skin, and this may be the mechanism of auto-infection as described by other workers. Rountree *et alii* (1960) found that seven patients in their survey developed infections due to staphylococci of the same strain as those isolated

from the nose. Five of these patients had plastic seals on their wounds. It is possible that their infections were due to skin organisms which would have been sealed beneath the plastic. However, nasal carriage is not a necessary condition for auto-infection. Nor can one eliminate the possibility that skin organisms precede nasal carriage, and may be associated with the cause of nasal carriage rather than the result of it. It is interesting to note that in our series the patient who carried phage type 80/81 in his nose and phage type 75/77/A77 on his skin developed an infection due to the latter, although here, as elsewhere, type 80/81 is regarded as an "epidemic" strain. These findings suggest two ways of decreasing auto-infection of operation wounds. The first is to give patients who are nasal carriers an antibiotic nasal treatment for a few days before operation. This may prevent some auto-infections if nasal carriage precedes skin contamination. A more satisfactory way would be to use a pre-operative skin preparation which effectively removes pathogenic organisms from the skin.

The results of our comparison of "pHisoHex" and "Zephiran" emphasize the difficulty of satisfactorily sterilizing the skin. Although it has been found that "Zephiran" is significantly superior to "pHisoHex", neither preparation appears to be adequate. The poor results obtained with "pHisoHex" were disappointing, in view of the excellent results obtained with it for the surgical hand scrub (Jarvis, 1960; Smylie *et alii*, 1959). This is presumably because of the different methods of application. Each nurse was shown how to use "pHisoHex" when she first prepared a patient with it. Any faults in its application were therefore no more likely to be present than in its use by any hospital staff. However, obviously it cannot be used as effectively on a patient's abdomen as it can be used on a surgeon's hands, which are scrubbed under running hot water. "pHisoHex" is considerably more trouble to use, and its use is justified only if it gives much better results than other preparations. The importance of skin preparation is emphasized by the presence of staphylococci on the skin of 13.3% of patients before operation, and by the fact that it was found that staphylococci could survive either of the skin preparations tested. It is therefore necessary to find a skin preparation which will remove from the skin organisms that can cause wound infections. Other preparations have been suggested; for example, iodine (1%) in alcohol has been found to be effective in 30 seconds (Story, 1952). Surgeons are not always anxious to use this because of the danger of patients being sensitive to it. It may be that this danger has been over-emphasized and that we should reconsider the use of this disinfectant (Gardner, 1948).

The study is not complete without some consideration of the possible sources of the infections that were not autogenous.

Ward Infections.

As was found by Rountree *et alii* (1960), the greater number of infections in this series (10 out of 17) were ward infections. Wounds were dressed from individual trays set up in the sterilizing room. The wounds were covered by sterile gauze and a large sterile cotton-wool pad, held in place by non-sterile sticking plaster. In each of two cases of infection, to determine the source of infection, nasal swabs were taken from nursing and medical staff who had attended the patient's wound. In neither case was it possible to find any carriers of the same strain of staphylococcus as that isolated from the patient's wound. In one case only of ward infection, the patient carried the same staphylococcus (phage type 80/81) nasally as that isolated from his wound, and may have been the source of his own infection. This patient's wound swab was initially uncontaminated and the organism could presumably have come from his blankets or other articles in his environment. The source of the other ward infections cannot be established. They were spaced over the five months, and their phage types were as follows: phage type 80/81, three; non-typable, four; Group IV, one; miscellaneous, one. There was no reason therefore to associate these infections with any particular member of the staff.

Theatre Infections.

Three of the theatre infections were not considered to be auto-infections. In one of these cases, the patient carried the same strain (phage type 80/81) nasally as was isolated from the wound, and the infection may have been autogenous. It cannot be said where the other infections originated. Air counts with a Bourdillon air-slit sampler were taken in the theatre on 16 occasions during the investigation. The total counts ranged from 2 to 12 b.c.p. per cubic foot. Staphylococci (one per 16 cubic feet) were isolated on one occasion only. Therefore it seems unlikely that air contamination could be the source of infection. Swabs taken about the theatre on several occasions revealed staphylococci once only, and they were then isolated from the sister's splash bowl and the instruments on the trolley at the end of the operation. No other likely sources of infection were discovered.

Summary and Conclusions.

Swabs were taken from patients about to undergo operations to determine the relationship of nose and skin staphylococci and skin staphylococci and wound infection. It was found that 33% of 196 patients were nasal carriers of staphylococci before their admission to the theatre. There was a highly significant relationship between nasal carriage of staphylococci and the pre-operative presence of staphylococci on the skin at the site of operation. Seven of the 17 wound infections which developed during the survey were considered to be theatre infections. There was found to be a highly significant relationship between the pre-operative presence of staphylococci on the patient's skin at the site of operation and the development of theatre-acquired infections. This points to skin organisms as a cause of autogenous post-operative wound infection.

A ward trial was conducted to compare "Zephiran" (1%) in spirit and "pHisoHex" as pre-operative skin preparations. "Zephiran" in spirit was found to be superior to "pHisoHex" and considerably less trouble to use. However, "Zephiran" is not completely effective in removing staphylococci from the skin, and therefore does not prevent the development of wound infections due to skin organisms. It is suggested that an improved skin preparation is required to prevent autogenous infection of post-operative wounds.

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LUMBAR MANIPULATION: DOES IT DO HARM? A FIVE-YEAR FOLLOW-UP SURVEY.

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THE following survey has been carried out in response to the view held by some people that manipulation in the treatment of low back pain can do harm and therefore should not be included among the methods available. This view could be held with some justification if one inferred indiscriminate and roughly handled manipulation; however, the type of manipulation implied in this discussion is a controlled, passive movement in a particular direction, which is governed by an assessment of progress between manoeuvres. General anaesthesia or muscle relaxants are not used, and a heavy controlled pressure or thrust is used only when this has been gradually built up to and is deemed necessary in order that the patient may gain freedom of movement or freedom from pain. This necessity is gauged by the patient's progress and response to the various manoeuvres during treatment.

If the problem of the pain being made worse is to be looked at constructively, it must be considered in the light of dangers involved in any procedure—surgical or medical—and it must also be considered on a basis of comparison of numbers and not on the premise that if one patient is made worse the whole procedure must be condemned. Consideration of patients possibly made worse by treatment must also be made with a knowledge of the normal progression of the condition—for example, disc damage giving back pain can normally lead to herniation and nerve-root compression, giving sciatic pain.

The results of treatment by manipulation of patients suffering from low back pain and allied symptoms during 1955 and 1956 was published in an earlier paper (Maitland, 1957). In that survey were 95 patients who had back pain. Of these 95 patients, 81 were treated by manipulation (six of these had been unsuccessfully treated by heat and exercises beforehand). In this group of 95 patients there were 20 who underwent heat and exercises as a first line of treatment. Of the group treated by exercises (20 patients) there was a 50% rate of success taking 23 days and in the manipulation group (81 patients) there was a 96% rate of success in 4-5 days provided that there was no associated "sciatic type scoliosis", and a 91% success in six days if this type of deformity was present.

It was decided to contact these 95 patients to ascertain whether any of them considered that they had been made worse in any way by their manipulative treatment. It was felt that the patients' views in retrospect could bring forth interesting information.

To this end the 95 patients were circularized in November, 1960, with a questionnaire requiring "Yes" and "No" answers. Despite the fact that the questions were simple, and that a reply-paid envelope was enclosed, there were only 48 replies. Four of these patients were treated by exercises only and 44 were treated by manipulation. Of the 44 patients treated by manipulation there were 39 who claimed success and five who considered the treatment a failure, and this figure is exactly the same as that estimated in the review of 1957. One of the failures considered that he had been made worse.

The patient made worse gave the following story.

After he discontinued treatment his pain was more severe, but it had not increased in its area or distribution. This aggravation of the symptom took three days to subside. At a later date he had treatment elsewhere, consisting of heat and exercises. This caused a similar aggravation of the pain. The patient considers that any form of activity has the effect of increasing the pain, and because of this he has been unable to work for five years.

This man could hardly be considered to have been made irretrievably worse by manipulative treatment.

For the purposes of the 1957 survey, results were subdivided into successes and failures, but in the questionnaires the successes and failures were further subdivided as follows. Success was subdivided into (i) "good", meaning that the pain was gone or nearly gone; (ii) "relieved", meaning that the pain had been greatly lessened and did not prevent the patient leading a normal existence. Failure was subdivided into (i) "unchanged", meaning that the pain was approximately the same as before treatment; (ii) "worse", meaning that the pain was worse than before treatment.

Among the 39 successes there were 31 patients who were "good" and eight who were "relieved". The reports of these eight "relieved" patients are as follows. One was better without any further treatment; one was better after six months' treatment with an osteopath; three did not have any further treatment and still have their symptoms; three still have their symptoms, even though one had further manipulative treatment from a chiropractor, one was treated in hospital with continuous traction, and one had heat, massage and exercises.

Among the five failures there were four patients who were "unchanged" and one who had been made worse. His story has already been given. The reports of the four "unchanged" patients are as follows. One was better after six weeks without any further treatment; three are still unchanged (of these three patients two did not have any other treatment and one had osteopathic treatment).

It is a well-known fact that back symptoms have a habit of recurring. Of the 44 patients treated by manipulation, 31 have had a recurrence of their symptoms and 14 of these have had more than one recurrence. The value of exercises as a means of preventing recurrence is a matter of interest and a survey along these lines would be of value. Although the following figures are too small to be conclusive, it is interesting to note that of the four patients who were treated successfully by exercises, two have had recurrences of their back symptoms.

As was mentioned earlier, low back pain can progress into sciatica. Four (9%) of the 44 patients treated by manipulation developed leg symptoms and reported as follows. One had pain in the upper posterior part of the leg (he had not had any treatment for this and still has the pain); two had pain in the upper and lower posterior parts of the leg without any neurological changes (both have had further manipulative treatment giving relief of symptoms); one had pain in the upper posterior part of the leg, the lower posterior part of the lateral aspect of the leg and the dorsum of the foot, with loss of sensation in the lower part of the leg and loss of the ankle jerk (acute symptoms were relieved by surgery). In attempting to evaluate the part which manipulation may have played in producing these symptoms it is interesting to note that each of the four patients considered that the results of treatment had been "good" for the symptoms treated.

Conclusion.

In this group of 44 patients there was only one patient who considered that his condition had been made worse by treatment, and from his story there is no indication that the manipulation did do him any material damage, or that it did in fact make him any worse than any other active treatment would have done.

However, there were four other patients who, although they did not consider they had been made worse by treatment, did develop sciatic symptoms. It could perhaps be said that it was the manipulative treatment which encouraged the underlying disk damage to progress. The fact that this is a normal progression and also that it happened in only 9% of the patients manipulated must indicate that manipulation can hardly be convicted.

Again it must be mentioned that rough and ill-timed manipulation could produce quite a different result in a survey such as this.

Summary.

The extent to which manipulation can be blamed for making patients' conditions worse is discussed in this paper. Patients treated by manipulation and reported on in a previous paper were used as follow-up material in the discussion.

There were only five patients out of 48 whose conditions could be considered to have deteriorated during or after treatment, and their histories and the implications are discussed.

Acknowledgements.

In 1957 I was pleased to be able to thank Dr. W. J. Betts and Dr. Lansell Bonnin for their encouragement and assistance, especially as most of the referrals for physiotherapy had been from them. Again with this follow-up of the same patients I am indebted to them for the time they have taken in helping me with the presentation of this project.

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ASCARIASIS AMONG ABORIGINAL CHILDREN IN VICTORIA.¹

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ASCARIASIS appears to be an uncommon entity in the general population of Victoria. Cases seldom come to the attention of general practitioners, and in laboratories, such as at the Royal Children's Hospital, the number of faecal specimens found to contain the ova of *Ascaris lumbricoides* is small. The influx of large numbers of migrants in the post-war period has not materially altered this situation.

The attention of the Chief Health Officer was drawn to a report by Dr. Jan Finney, of the Aborigines Welfare Board, that several cases of ascariasis had occurred at an aboriginal settlement in East Gippsland. The resulting investigation initiated in 1957 forms the basis for this paper. This settlement, situated in the coastal region, consists of a number of separate family units housing a population at that time of 185 part-aborigines. (It is doubtful if there are any full-blood aborigines remaining in Victoria.) The hygienic standards are low and it is common practice for infants and young children to deposit their excreta indiscriminately in and around the houses. This situation, together with the wet and frequently humid climatic conditions, is well suited for the survival and maturation of the ova. Children playing in this heavily "seeded" environment provide ample opportunities for faecal-oral transmission of the parasite.

Enquiries revealed that over a period of years there had been a high incidence in these children of pneumonia. The association between this condition and ascariasis is well known (*Ascaris* pneumonitis). The larvæ migrating through the lung tissues cause a certain degree of trauma which may be followed by bronchopneumonia. In the light of subsequent events it would appear that many of these cases could be attributed to this cause.

The results of this investigation are based on the microscopic examination for ova of a single faecal specimen from all persons in the surveys. As a screening medium the specimens were treated by the Willis flotation technique (Willis, 1921). Any stools giving negative results for *A. lumbricoides* ova were then subjected to a more sensitive formol-ether concentration test.

¹Read at a meeting of the Paediatric Society of Victoria in February, 1960.

Results.

Of 95 children in the 0-14 years age group 52 (54.7%) were found to have *Ascaris* ova in their stools (Table I). In addition, there was a very high incidence of *Trichuris trichiura* (whipworm) infestation, 84 (88.4%) such specimens being detected, whilst seven patients were harbouring *Hymenolepis nana* (dwarf tapeworm).

As a result of these findings arrangements were made to have elixir piperazine citrate ("Antepar") administered at six-weekly intervals to all of the children (one dose of 6 drachms).

A follow-up survey two years later (1959) revealed a pronounced reduction in the *Ascaris* infestation rate. Only 12 children showed evidence of the parasite out of 81 examined. However, on further inquiry it was elicited that four of the 12 children had not been given piperazine, which in effect reduced the number of positive findings to eight out of 77 treated children. There was a slight increase in trichuriasis (Table I). It should be pointed

TABLE I.

Ascaris Surveys on Aboriginal Children—Aboriginal Settlement, East Gippsland.

Year.	Number Examined.	Number of Specimens Giving Positive Results for Ova.		
		<i>A. lumbricoides</i> .	<i>H. nana</i> .	<i>T. trichiura</i> .
1957	95	52 (54.7%)	7 (7.4%)	84 (88.4%)
1959	81	12 (14.3%) ¹ 8/77 (10.4%)	6 (7.4%)	75 (92.6%)

¹Four of the 12 positive specimens were from untreated children—the corrected figure is shown below.

out that this group of people is not an entirely static population. There is a certain degree of migration to and from the surrounding areas, which are usually timber-milling centres. Whether these people live on or off the settlement the same poor elementary hygiene prevails, irrespective of the type of abode—house or crude humpy. It can be said therefore that these groups of aborigines are homogeneous from an epidemiological aspect.

This viewpoint is supported by the results of the examination of 33 aboriginal children living in four separate areas of East Gippsland; almost two-thirds were harbouring *Ascaris* worms, whilst the incidence of trichuriasis was similar to that prevailing in the settlement (Table II).

TABLE II.

Ascaris Survey on Groups of Aboriginal Children in Victoria (1959).

Area.	Number Surveyed.	Number of Specimens Giving Positive Results for Ova.		
		<i>A. lumbricoides</i> .	<i>H. nana</i> .	<i>T. trichiura</i> .
East Gippsland	33 ¹	21 (63.6%)	1 (3%)	25 (75.8%)
Robinvale	61	0	0	2 (3.3%)
Dimboola				
Echuca				
Mooroopna				

¹Excludes those living on the aboriginal settlement.

In view of the situation in East Gippsland it was decided to sample groups of similar children living inland in widely separated areas from Robinvale in the Mallee to Mooroopna in north-eastern Victoria. Not one specimen showed *Ascaris* ova and only two contained *Trichuris*, out of 61 examined (Table II).

The possibility of a spill-over from the aboriginal children in East Gippsland to others attending mixed schools was given consideration as a potential public health problem. Of 148 non-aboriginal children in four such schools not one was detected as an *Ascaris* carrier and only 13 (8.8%) showed evidence of trichuriasis (Table III).

Discussion.

This investigation has not only confirmed the observation that ascariasis occurs among the inhabitants on this

particular settlement, but has shown that this disease exists among aboriginal children living in the general community in the East Gippsland area. As would be expected the adults were similarly affected, but to a lesser degree. For the purposes of this paper they have been excluded from consideration.

It is interesting to conjecture on the apparent absence of this parasite (and to a slightly lesser extent *T. trichiura*) among the inland groups. Two possible explanations come to mind—namely, lack of a reservoir of ova, or climatic conditions unfavourable for survival of the parasites outside the human host.

TABLE III.

Ascaris Survey on Non-Aboriginal School Children—East Gippsland (1959).

School.	Number Surveyed.	Number of Specimens Giving Positive Results for Ova.		
		<i>A. lumbricoides</i> .	<i>H. nana</i> .	<i>T. trichiura</i> .
A	16	0	0	1
B	53	0	0	5
				(3 positive in one family)
C	39	0	0	2
D	40	0	0	5
				(2 positive in one family)
Total ..	148	0	0	13 (8.8%)

Inquiries revealed that there was little intermixing between the inland and East Gippsland inhabitants. The latter tend to confine their walkabout habits to their own coastal region, usually in search of seasonal work. In general the same holds for the other groups. Hence opportunities for dissemination of this potentially large source of ova are limited.

Climatic conditions in the inland sampling areas differ considerably from those prevailing in the coastal zone—the extreme being at Robinvale, which has one of the hottest and driest climates in the State. Such conditions militate against survival of the parasite ova outside the body unless transfer to a new host occurs within a reasonable time. Dunn (1960), in his investigations on intestinal parasites in aboriginal children living in New South Wales, found a similar disparity in the *Ascaris* incidence between coastal and inland dwellers. The Victorian survey results closely parallel those reported by that worker. Whether this climatic situation would operate against spread of the disease once the parasites were introduced into these inland regions is difficult to assess. With few exceptions standards of personal hygiene and sanitation are poor, irrespective of the geographical disposition of these people.

It was observed in the mixed schools that a moderate degree of personal contact took place between the pupils, both in the classroom and at play. This is encouraged in most instances by the teachers in an effort to assist the assimilation of the aboriginal children. In addition, there is the handling of articles and equipment in common use, toilet facilities and so on. Whilst these circumstances favour the transmission of bacterial and viral intestinal infections they are not conducive to the communal spread of ascariasis, for which gross faecal contamination of fingers or foodstuffs is the usual essential. The social pattern outside the school environment is such that it is unusual for aboriginal and non-aboriginal children to play together. As a result there is little opportunity for the latter group to be exposed to the heavily-seeded areas around the aboriginal dwellings. This aspect was well demonstrated in a small outbreak of ascariasis in a Sydney suburb, in which the affected children played in backyards where there was a high degree of faecal contamination of the soil (Backhouse and Bearup, 1951).

No attempt was made to carry out a controlled study of the efficacy of piperazine citrate in reducing the incidence of ascariasis. This measure was introduced solely as a public health expedient and the results were observed

after a lapse of two years. As pointed out earlier, this was not an entirely static population, owing to migration to and from the settlement, in addition to new births and exclusion of children from the series on reaching the age of 15 years. Apart from these factors no changes in the epidemiological picture had occurred. Poor hygiene, the main basis for spread, had not changed. It is considered that the marked reduction in the infestation status must largely be attributed to the drug. Over this two-year period it was reported that the number of pneumonia cases in these children was insignificant. Unfortunately there were no satisfactory figures available for comparison, but such a change in the picture could be expected if these pulmonary infections were the outcome of *Ascaris* infestation, as was probably the case.

Summary.

A high incidence of ascariasis has been found in aboriginal children in East Gippsland, but it is apparently absent in similar groups living inland.

In mixed schools there was no evidence of transmission from the aboriginal to the non-aboriginal pupils. Possible reasons for this limitation of spread are presented.

The efficacy of piperazine citrate in reducing the incidence of ascariasis is discussed.

Acknowledgements.

I am indebted to Dr. Kevin Brennan, Chief Health Officer, Victoria, for permission to publish this paper. Valuable assistance was rendered by Dr. Jan Finney, Dr. Dorothy Newton and Mr. B. White of the State Health Department, by officers of the Aborigines Welfare Board, in particular the staff of the aboriginal settlement, and by the many officers of the Education Department who helped make this study possible.

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ZINC IONIZATION AND VASOMOTOR RHINITIS.

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Introduction.

THE term vasomotor rhinitis is used in this article to cover seasonal and perennial cases. Cases were admitted to a series only if there was no evidence of infection or polypi, and if the septum was in such a position as not to be responsible to any significant degree for the patient's symptoms.

The unsatisfactory situation existing today in regard to these cases is made more obvious by the multiplicity of methods of treatment. Disregarding the possibility of observer bias, criticism may be levelled at the often-used method of analysis of results. One finds "slight improvement", "moderate improvement", "good improvement" and equivalent terms used, and only those cases labelled "no improvement" are classified as failures. To avoid ambiguity in classification, only those patients who were without symptoms or so relieved as to require no further treatment (including palliatives) were recorded as successes. All other cases are regarded as failures, and the results are assessed in this article in this manner.

An attempt has been made to try to establish which cases are most likely to respond to zinc ionization, whether zinc ionization does in fact change the intranasal pH and what proportion of patients initially responding maintain their improvement for at least one year. Further, it was desired to know whether the passage of current was of any value

and if antihistamines given at the same time would raise the percentage of successful results.

Method.

When zinc ionization was performed, two to three feet of half-inch ribbon gauze was soaked in a 1% solution of zinc sulphate, wrung out and then packed into the nose. A current of 3 milliamperes for 10 to 20 minutes was passed at each sitting; three treatments were given each week for three weeks.

Results.

As a preliminary, a review was made of the case history sheets of 125 patients treated by zinc ionization. In 54 (43%) of these cases there appeared no doubt that treatment had been very successful. Further groups of patients were all seen by the author, both before and after treatment. Of these, 42 cases were treated as described above, and assessed at the end of treatment and three to four weeks later. Treatment was successful in 22 (approximately 52%). A further 23 patients were treated by being prepared for ionization in the routine manner, but having current passed on the right side only. There was a good result in 13 cases and a bad result in 10 cases (approximately 56% were successful). Several patients noticed a difference between the two sides during treatment, but at the end of the course if benefit was obtained it was equal on both sides. Another 15 patients were treated by being packed only on both sides. Of these seven had a good result (47% approximately). Another 20 patients were treated by bilateral intranasal packing supplemented by heavy dosages of antihistamines. Ephedrine was used to counteract side-effects. It was hoped to raise the success rate above the region of 50%, but again it was unchanged (10 cases or 50%). A reasonable over-all assessment of 50% success appears justified.

Which Patients are More Likely to Respond?

Analysis of the incidence of symptoms of sneezing, obstruction, rhinorrhoea and nasal irritation did not reveal that any symptom or sequence of symptoms occurred predominately in the good- or bad-result groups. Thus one cannot tell from symptomatology whether a patient is more likely to respond to treatment or not. Again, though the largest proportion of cases treated were perennial, there was approximately the same incidence of good and bad results in the seasonal cases and the perennial cases as in the over-all figures—that is, 50%. Analysis of the duration of symptoms of the improved and unimproved patients revealed an average of 2 years 8 months for the improved group and 3 years 9 months for the unimproved group. There were approximately equal numbers of males and females in the improved and unimproved groups, the average age in the former group being just under 37 years and in the latter group 34 years 4 months. Further, the knowledge of whether a patient responded previously to antihistamines or not was found of no value in assessing the probability of his responding to zinc ionization or intranasal packing.

Zinc Ionization and Intranasal pH.

The change in intranasal pH was investigated rather than absolute values in an attempt to avoid difficulty due to lack of accepted absolute values. Readings of the pH were made just before treatment was commenced, then at the end of the course of intranasal zinc ionization and finally three to four weeks after the course was completed.

In 35 cases the intranasal pH readings at the beginning and just after the completion of one course of treatment were compared. Of 19 good-result cases, nine showed an acid change, seven an alkaline change and three no change at all. Of 16 bad-result cases, 11 showed an acid change and five an alkaline change.

Thus irrespective of the clinical result in 35 cases after treatment, the readings in 20 cases were more acid, those in 12 were more alkaline and those in three unchanged. However, when related to the clinical result, by current supposition, the cases with a good result should show a

significant change to a more acid pH and the cases with a bad result either maintenance of an alkaline state or a further shift in the alkaline direction. This is not borne out on the above figures.

When intranasal pH readings at presentation were compared with those taken three to four weeks after the completion of treatment, it emerged that of 12 good-result cases, six showed an acid change and six and alkaline change, while of seven bad-result cases, five showed an acid change and two an alkaline change.

The clinical condition of none of the patients changed between the completion of the course and the time of taking the pH readings, three to four weeks later. Again, one sees no significant pH variation in the good-result group, and if anything the tendency to an acid change in the bad-result group.

Finally, when the intranasal pH readings taken immediately after the completion of the course are compared with those taken three to four weeks later, it is clear that of 10 good-result cases, six showed an acid change, three showed an alkaline change and one showed no change, while of eight bad-result cases, six showed an acid change, one showed an alkaline change and one showed no change.

These figures suggest that a change to a more acid state tends to occur three to four weeks after the end of treatment. However, the above results will lead to erroneous conclusions if the magnitude of change of pH is not taken into consideration. The average pH was found for the good- and bad-result groups on presentation, at the completion of the course and three to four weeks later; six pH averages were thus obtained. The difference between the highest and the lowest of these averages was 0.12. Furthermore, only eight out of 92 separate readings were above 7.3.

A reasonable conclusion is that the vast majority of readings are within the normal range and that zinc ionization does not alter the intranasal pH.

The instruments used were a pH meter and millivoltmeter accurate to 0.1%.

Follow-up Results.

It was felt that if, as the result of nine treatments, the patient maintained his improvement for one year, this would be a satisfactory response. This allows in seasonal cases for exposure again to the offending allergen.

Twenty patients treated over one year ago were reexamined and 10 had remained symptom-free. Several of these had been symptom-free for much longer. Again, whether the symptoms were seasonal or perennial did not have any significance.

Discussion.

It has been suggested in the past that zinc ionization may act by depositing zinc alluminate on the nasal mucous membrane, altering its reactivity and/or rendering the allergic nose more acid. Investigation has revealed that there is no consistent change in intranasal pH after zinc ionization when readings taken before treatment, immediately after the completion of the nine treatments and three to four weeks later were compared. Conclusive support of the view that the current is of no therapeutic value was obtained when it was found that the success rate was unaltered when the nose was packed only and no current was passed. Perusal of past literature reveals a large number of modes of treatment for vasomotor rhinitis for which success has been claimed. These include cauterization of sensitive spots of the nasal mucous membrane, injection of physiological saline into the inferior turbinates and Proetz displacement therapy. Touching the inferior turbinate with a probe will be seen to cause a diminution of its size. A submucous resection of the nasal septum, with its intranasal manipulations, in a case of associated vasomotor rhinitis, will often be seen in the post-operative period to have caused a marked reduction in inferior turbinate size. Again, very often when a patient presents with nasal obstruction and vague face-aches following acute

rhinitis an antral lavage is performed, which, although it produces a clear return, causes a quick subsidence of symptoms. There is one factor at least which all of the above methods have in common—that is, mechanical stimulation of the nasal mucous membrane. This, it would appear, causes a reflex vasoconstriction, and alters the balance of the intranasal hemodynamics.

Summary.

1. With the above strict criteria of success 50% is considered a reasonable assessment of the immediate success rate.
2. It would appear that the passage of an electric current is found to have no therapeutic value.
3. It is considered that beneficial effects are due to the mechanical stimulation of the nasal mucosa.
4. There are no criteria for deciding which patients are likely to benefit from intranasal packing.
5. The success rate falls to 25% over one year.

Acknowledgement.

I should like to thank Mr. C. Gill-Carey, Harley Street, London, for his advice and guidance in the preparation of this article, and Dr. Basil Kiernander, who, with his senior physiotherapist, Miss J. Burton, rendered every assistance possible.

RELEASE OF ADENOSINE INACTIVATING ENZYME IN CARDIAC INFARCTION.¹

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AND

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DRURY, Lutwak-Mann and Solandt (1938) demonstrated the presence of an agent capable of inactivating adenylic compounds in human plasma, and showed that this enzyme increased in the blood of the cat following its decapitation. Kellaway and Trethewie (1940) demonstrated the release of adenylic compounds and corresponding inactivating enzyme from the perfused heart and liver when injured by venom. In Figure I is reproduced an electrocardiogram from the paper by Kellaway and Trethewie (1940) showing S-T depression of infarct type following the injection of venom intravenously in the cat. This enzyme released by venom was subsequently referred to as a "deaminating" enzyme and was also shown to be released by chloroform and trypsin (Trethewie, 1941; 1942a). The first evidence that such an enzyme was released in conditions in man was presented by Trethewie (1942b), when an increase was shown to occur in pneumonia, following the use of volatile anaesthetics, in a severe surgical procedure with shock and following haemolysis (Trethewie, 1946). Ischaemic muscle was then shown to release a similar enzyme, as did reduction of the rate of blood flow through the liver (Trethewie, 1947).

Biochemical investigations (Needham, 1930) revealed the presence of transaminating enzymes and these were subsequently shown to be elevated in the plasma in cardiac infarction in man by La Due, Wroblewski and Karman (1954). They were similarly found to be elevated in hepatitis.

In view of the high concentration of adenosine in heart muscle and the extremely marked inactivation of adenosine by the heart (Kellaway and Trethewie, 1940) (while a 1 in 200 solution of "Lacarnol" (containing adenylic compounds) was perfused through the heart once, its activity was reduced by 70%, suggesting great enzyme activity), it was thought worth while to determine whether adenosine

inactivating enzyme was released in cardiac infarction in man, and if so, whether it might more significantly indicate heart damage, perhaps greater amounts of it being liberated and for a more prolonged period than was the case with the transaminases.

Method.

In previous papers (Trethewie, 1942b; 1946) the level of deaminating enzyme in normal human plasma, as estimated by inactivation of "Lacarnol" after 20 minutes' incubation, was shown to average 0.2 µg. "Lacarnol" per millilitre in a system containing 2% "Lacarnol" (pH 7.4 to 7.5). If the inactivation of adenosine 5-monophosphoric acid is of the same order, this is equivalent to 10 µg. adenosine per millilitre in a system containing 50 µg. adenosine per millilitre. In the experiments recorded in this paper, the technique was as described earlier (Trethewie, 1942b), except that the substrate concentration was 100 µg. adenosine 5-monophosphoric acid per millilitre. In some instances heparinized plasma, obtained immediately, was deep-frozen. The hydrogen ion concentration was controlled by bubbling a 5% carbon-dioxide-in-oxygen solution over plasma samples. Our control plasma—that is, plasma with added adenosine—occasionally titrated at slightly over 100 µg. adenosine per millilitre, possibly owing to white cells not having been completely centrifuged out. It would not therefore be expected that we could detect, with the method employed here, reduction in activity of a system containing normal plasma after 20 minutes' incubation. This in fact proved to be the case.

Findings.

In five instances in which normal plasma was used—that is, plasma obtained from patients not suffering from hepatitis or infarction—there was no significant reduction in activity (Table I).

In nine instances blood plasma obtained from patients with unequivocal evidence of myocardial infarction was incubated for 20 minutes, and the reduction in cardio-depressant activity of added adenosine (100 µg. per millilitre) was measured. Except in one instance, in which blood was collected seven days after clinical infarction, significant inactivation of cardio-depressant activity was detected in all cases. The figures varied from 20 to 85 µg. adenosine inactivated per millilitre (Table I).

The findings in two of these instances (Cases XIII and XIa) are shown in Figure IV. In the upper right-hand panel the cardio-depressant response to plasma (Case XIII) after 20 minutes' incubation (P_{20}) is seen to equal that to 8 µg. adenosine (A_8). In the lower panel the cardio-depressant response to plasma (Case XIa) after 40 minutes' incubation (P_{40}) is seen to equal that to 3 µg. adenosine (A_3). The cardio-depressant response to plasma boiled immediately (P_i) is seen to equal that to 10 µg. adenosine (the actual amount added). The electrocardiogram performed on this patient at this time indicated antero-septal cardiac infarction (BC type infarct, Figure V). This was confirmed later at autopsy following a subsequent further infarction, this time situated posteriorly. Infarct plasma before incubation sometimes contained more cardio-depressant activity than could be accounted for by the amount of adenosine added. This excess over 100 µg. adenosine per millilitre of infarct plasma to which 100 µg. adenosine per millilitre was added before incubation was sometimes as great as 10–20 µg. adenosine per millilitre (for example in Case VI, in which the patient died), and this might have been due to a small release of adenosine in infarction. It has recently been shown (Gazes, Richardson and Woods, 1959) that noradrenaline is liberated from the heart in cardiac infarction. The release of other tissue substances contained in the heart, such as adenosine, would therefore not be unexpected after such injury.

This increased activity is illustrated in the upper left-hand panel in Figure IV, where cardio-depressant activity of plasma (Case XIII) to which adenosine was added and boiled immediately (diluted 1:10) is shown to equal that to 12 µg. adenosine.

¹ Technical assistance for this work was aided by a grant from the National Health and Medical Research Council of Australia.

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TABLE I.
Summary of Laboratory Findings in Fourteen Cases of Myocardial Infarction and Controls.

Case Number	Electrocardiographic Report.	Enzyme Activity (Reduction in Adenosine Con- centration after 20 minutes' Incubation) (μ g. per Millilitre).	Autopsy Report.	Interval between Onset of Infarction and Collection of Blood (Hours).
I	Control.	0		—
II	Control.	0		—
III	Control.	0		—
IV	Control.	0		—
V	Control.	0		—
VI	Antero-lateral infarction.	85	Antero-septal infarction.	20
VII	Anterior infarction.	44	Survived.	36
VIII	Posterior infarction.	32	Survived.	4
IX	Posterior infarction.	29	Survived.	26
X	Antero-septal infarction.	54	Antero-septal infarction.	4 ¹
XI ^a	Posterior infarction.	20	Antero-septal laminar scar and recent posterior infarction.	24 ¹
XI ^b	Posterior infarction.	0	Antero-septal laminar scar and recent posterior infarction.	7 (days)
XII	Antero-septal infarction.	45	Survived.	40
XIII	Postero-septal infarction.	20	Postero-septal infarction.	66 ²

¹ Only minor histological changes seen in heart, death occurring 10 hours after onset.

² Second infarction to which patient succumbed occurred 21 days later. No test performed then.

³ Second infarction to which patient succumbed occurred 5 days later. No test performed then.

We employed adenyly compounds as presented in "Lacarnol" in two further experiments (Cases XIV, XV) in an attempt to determine whether greater enzyme activity might be revealed when a heart extract was used in contradistinction to adenosine 5' phosphoric acid. Such was not the case. In the "Lacarnol" systems the reduction was 32% and 33%, giving an approximate equivalent of

less (20 to 45 units), blood samples being collected in from 4 to 66 hours (Table II). The sample collected at seven days (Case XI^b) is excluded from this series, as it is

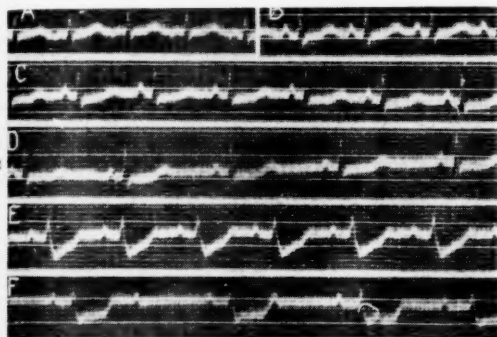


FIGURE I.

Electrocardiogram of rabbit injected with cobra venom. Note development of infarct pattern (E) and 2:1 block (F). (Reproduced from the *Australian Journal of Experimental Biology and Medical Science*.)

28.5 μ g. and 29 μ g. adenosine inactivation per millilitre. The former patient, whose electrocardiograph indicated anterior infarction, survived and the latter died 22 hours after the onset, the autopsy revealing massive infarction of the left ventricle.

The interval from the time of infarction to the time of collection of the blood varied from 4 to 66 hours in the instances in which significant enzyme activity was detected. In the case of the longest of these intervals—namely 66 hours—20 units only of enzyme were detected—the lowest reading of the series. In another instance, at 24.5 hours, the same figure (20 units) was obtained. However, in one patient from whom blood was collected 40 hours after the onset, considerable activity was detected—namely 45 units, or 45 μ g. adenosine inactivated per millilitre plasma in 20 minutes.

The degree of enzyme activity in the plasma of the two patients who died after the initial attacks was high (54 and 85 units), blood samples being collected after 4.5 and 20 hours (Table II). The degree of enzyme activity in the six patients who survived the initial attack was much

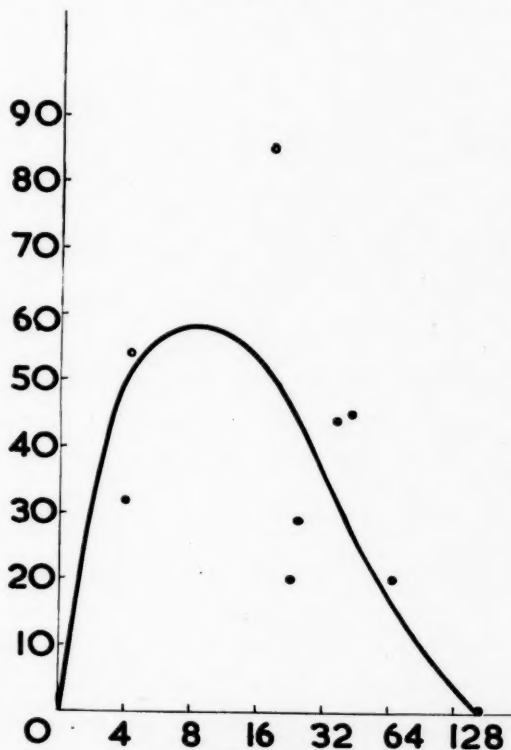


FIGURE II.

Enzyme output in plasma in patients with myocardial infarction. The ordinate represents microgrammes of adenosine inactivated per millilitre of plasma after 20 minutes. The abscissa represents the time interval in hours of blood collection after infarction. The closed dots represent the survival patients; the open dots represent the fatal cases.

a virtual control so far as infarction is concerned. It is likely that more serious infarcts produce more release of enzyme, and they may in fact be larger. Two patients

in the group of survivors died after subsequent attacks when the blood was not tested (see Table I).

Comparing the enzyme activity at comparable times, in the fatal cases this was 54 and 85 units at 4.5 and 20 hours and in the survivors it was 32 units at 4.5 hours, and 20 and 29 units at 24.5 and 26 hours respectively (Figure III). Thus enzyme activity was three times as great in the fatal cases, and, perhaps more significant, it was high at 20 hours.

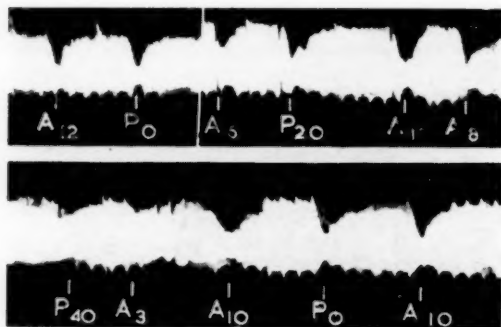


FIGURE III.

Responses of the atropinized auricle of three guinea pigs to plasma with added adenosine from patients with myocardial infarction. Upper panels: at P_0 response to 1 ml. plasma (diluted 1:10) to which 100 μ g. adenosine per millilitre was added (Case XIII); at P_{20} response to similar plasma after 20 minutes' incubation. Lower panel: at P_0 response to 1 ml. plasma (diluted 1:10) to which 100 μ g. adenosine was added (Case XIa) after 40 minutes' incubation; at P_0 response to similar plasma before incubation; at A_{12} , A_5 , A_{10} , A_1 , A_8 responses to 12, 6, 10, 8 and 3 μ g. adenosine respectively.

It is of interest to note that in the case of the patient who died 10 hours from the onset of the attack (Case X), in which the electrocardiogram showed gross evidence of antero-septal infarction, there were only minimal, though definite, histological changes in that area associated with coronary occlusion, without macroscopic changes, while the adenosine inactivating enzyme activity was very high. Macroscopic changes may not be gross before 20 hours.

The transaminase activity in the seven instances in which these were compared was significantly elevated in Cases VI, VII, IX, XIa and XIV (250, 30, 35, 64 and 71 units of serum glutamic oxaloacetic transaminase respectively), while in Cases XII and XIII levels were 22 and 23 units only (estimated at 40 and 66 hours), which is not significant. It would appear therefore that adenosine inactivating enzyme activity persists for longer in the plasma than serum glutamic oxaloacetic transaminase, since the outputs of the former were significant in all these instances. Tests for serum glutamic oxaloacetic transaminase frequently give negative results after 24 hours.

Discussion.

Studies in the past have shown that injury to adenosine-rich tissues also releases an enzyme which destroys the cardio-depressant property of adenosine, presumably owing to deamination of the adenine nucleus, and the production of inosine. In clinical cases of pneumonia, for example, the enzyme was found to be released into the plasma in increased amounts during the period of malaise (Trethewie, 1942). The present investigation has shown that a much greater amount of adenosine-inactivating enzyme is released into the general circulation of patients with myocardial infarction. This observation is particularly interesting in that the amount of adenine compounds released in the circulation upon injury to heart tissue is usually less than that released by other tissues. It would seem that the injured heart which could be expected to be particularly vulnerable to adenine compounds when weakened by infarction (for example, it is recognized as

being vulnerable to adrenaline) is provided with very high amounts of inactivating enzyme which will reduce cardio-depressant effects.

A comparison of the amounts of enzyme released with the severity of the infarct suggests that there is some correlation between them. The duration of enzyme release

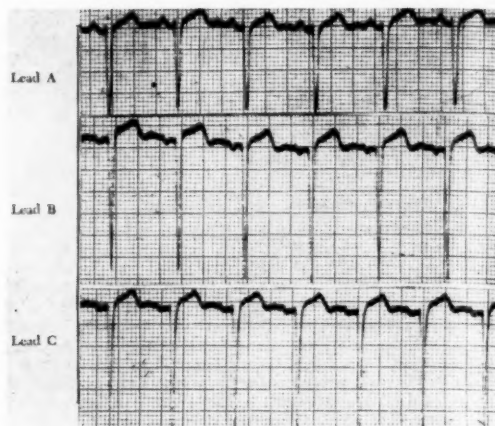


FIGURE IV.

Electrocardiogram in Case XI. Classical infarct pattern of BCG type—that is, recent antero-septal cardiac infarction. A second (posterior) infarct occurred 21 days later with a fatal outcome. Autopsy revealed antero-septal laminar fibrosis, plus recent posterior infarction.

after infarction was longer than the usual figures found in the determination of serum glutamic oxaloacetic transaminase, by the technique now in general clinical use. Furthermore, with the assay presented here, control plasmas yield a figure of 0 while positive plasmas yield a figure of 20 to 85 units, which is a sharper differentiation for the presence of this enzyme released than has been demonstrated to date for serum glutamic oxaloacetic transaminase.

As the pharmacological preparation used for assay in these studies might prove impracticable in hospital laboratories accustomed to the serum glutamic oxaloacetic transaminase detection technique, we are now developing a technique to detect the presence of adenosine inactivating enzyme by means of spectrophotometry.

Furthermore, in view of the well-documented cardio-depressant properties of adenine compounds, it is of interest to consider the clinical implications of the liberation of these substances in the plasma of patients with tissue injury. Of particular interest in myocardial infarction is the possibility of the additive effect of a powerful cardio-depressant released locally in the heart, which may seriously impair an already weakened myocardium. We have presented evidence for the release of such compounds in cardiac infarction, since in some instances plasma contained more cardio-depressant activity than could be attributed to the added adenosine monophosphate. If a pharmacological blocking agent for adenosine were available clinically, it is possible that the high acute mortality (within hours to days of the onset) might be reduced considerably. Immediate death would probably not be related to this mechanism, but rather due to asystole or ventricular fibrillation.

Summary.

1. Adenosine-inactivating enzyme is shown to be released up to 66 hours after myocardial infarction.
2. In two instances in the foregoing cases, the serum glutamic oxaloacetic transaminase content of the plasma was within normal limits.

3. Evidence is presented indicating release of an adenosine-like substance (which produces cardiac depression) in myocardial infarction a few hours after the onset.

4. It is suggested that release of such a substance may be partly responsible for acute death (other than instantaneous death or that associated with ventricular fibrillation) in myocardial infarction.

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Reports of Cases.

GANGRENOUS CHOLECYSTITIS WITH BILE PERITONITIS AS A COMPLICATION OF BURNS IN A FOURTEEN-YEAR-OLD BOY.

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A CASE of gangrenous cholecystitis with perforation and bile peritonitis occurring in a boy, aged 14 years, who sustained 45% full-thickness burns, has recently been treated at the burns unit of the Royal Perth Hospital.

A review of the entire literature on burns has failed to reveal a similar complication of burns.

An opportunity is taken to discuss a rational approach to the treatment of burns, especially with regard to the use of antibiotics and the local care of the burn wound.

Clinical Record.

The patient, a boy, aged 14 years, was admitted to the burns unit, having sustained full-thickness burns to both lower limbs circumferentially, both buttocks, the lower part of the back, both arms and both hands, as well as partial thickness burns to the face. This injury was the result of petrol exploding whilst he was priming the carburettor of a car with the engine running.

Resuscitation was commenced with intravenous therapy within one hour of the accident. The patient was nursed on a Stryker frame with the lower limbs and buttocks exposed; he was turned on this second-hourly. Both upper limbs were enclosed in occlusive dressings. The haemoglobin level on admission to hospital was 19.4 grammes per 100 ml. and the haematocrit reading was 59%.

The administration of crystalline penicillin in large doses by intramuscular injection was commenced. The temperature was 99.2° F. on admission to hospital and over the next five days it spiked up to 103° F. Intravenous "Achromycin" therapy was then commenced. Despite the rising temperature and the clinical picture of septicæmia, all the burnt areas were persistently sterile (judged from

daily cultures); but they finally produced on culture an abundant growth of *Pseudomonas pyocyanea* seven days after the patient's admission. Sensitivity tests showed that the organisms were sensitive only to "Chloromycetin" and polymyxin B. However, despite the exhibition of intensive appropriate antibiotic therapy by intravenous injection, the patient's temperature continued to rise to 103-104° F. Polymyxin B was not exhibited in view of its known nephrotoxic effect, especially as at this stage there was concern about the patient's renal state—he was becoming severely oliguric.

Despite second-hourly turning of the patient on the Stryker frame, the burnt surfaces on the lower limbs became moist and infected with *P. pyocyanea*; "Hibitane" soaks were applied four-hourly in an effort to loosen the eschars and hasten the formation of granulation tissue.

The patient's condition was fair up to 14 days after his admission to hospital, when he began to complain of severe, generalized, constant abdominal pain. This was not localized to any particular area of the abdomen. His temperature at this time was 103-104° F., and it was obvious clinically that he was septicæmic, although no positive blood culture had so far been obtained. Great difficulty was being experienced in obtaining blood for blood culture examination, because of the extreme extent of his burns. The total white-cell count at this time was 33,100 per cubic millimetre, with a marked shift to the left.

On examination of the patient the abdomen was seen to be distended; tenderness was extreme in all areas of the abdomen and generalized release tenderness was present. Bowel sounds were absent. A plain X-ray film of the abdomen with the patient in the supine position showed generalized bowel distension. An "erect" film was impossible because of the extreme distress of the patient.

The condition of the patient was causing acute concern because of the possible inevitability of laparotomy in his grave condition. It was felt that the most likely diagnosis was a hematogenous peritonitis resulting from his septicæmia, probably due to *P. pyocyanea*, as a profuse growth of this organism had been cultured from the burnt surfaces, and these were thought to be the obvious portals of entry. The decision was made to treat him conservatively with intravenous therapy and naso-gastric aspiration, plus antibiotic therapy.

However, over the next few hours the patient's condition continued to deteriorate, and with the generalized abdominal signs of peritonitis, a decision to perform an exploratory laparotomy was made in the hope that a remediable condition was present—acute appendicitis could not be excluded from the differential diagnosis.

The patient was wheeled to the theatre on the Stryker frame, and under general anaesthesia a laparotomy was performed without the patient's being moved from his bed. The abdomen was opened through a right paraumbilical, rectus-splitting incision. Two pints of dark, bile-stained fluid were aspirated from the general peritoneal cavity; the gall-bladder was intensely inflamed and haemorrhagic, and at the fundus it was black and gangrenous with a small perforation. The stomach, the duodenum and the rest of the abdominal organs, including the spleen, appeared normal on palpation.

A cholecystostomy only was performed, a Malecot catheter being brought out through a stab-wound in the right hypochondrium. The contents of the gall-bladder were cultured; no growth was produced and no bacteria were seen. This is not surprising, as only 35% of positive cultures are obtained from the contents of infected gall-bladders (Aird, 1957).

After operation the patient's condition was satisfactory—the abdomen was less distended and less tender, and bowel sounds returned on the third post-operative day. Minimal amounts of bile drained through the cholecystostomy tube and this finally ceased on the tenth post-operative day.

Despite the frequent administration of blood transfusions, the haemoglobin value three weeks after the patient's

admission to hospital was 6.6 grammes per 100 ml., having dropped from 11.0 grammes per 100 ml. in five days. A reticulocytosis was present (4.4%) and the direct Coombs test gave a positive result at 1:60 dilution of Coombs sera. The serum bilirubin level was 4.4 mg. per 100 ml.; the serum alkaline phosphatase level was 8.8 King-Armstrong units; rapid haemolysis was indicated.

At about this time coliform bacilli (*Bacterium anitratum*), which were sensitive to erythromycin, were isolated from the blood culture. Because of this, and the fact that the



FIGURE 1.

Note the intensely inflamed gall-bladder in the upper left-hand portion of the picture, and also the dark pigment stone lying in the common hepatic duct just above the entrance of the cystic duct.

blood was haemolysing very rapidly, erythromycin and steroid therapy were commenced. However, it was still thought that the organism most likely to be responsible for the acute cholecystitis was *P. pyocyanea*.

The patient's condition continued to deteriorate, and he finally died from overwhelming septicæmia and haemolytic anaemia 28 days after admission to hospital and 14 days after the emergency laparotomy.

Both kidneys at autopsy revealed evidence of active tubular necrosis. The lungs were acutely congested, with small areas of collapse; the spleen was acutely congested. There was extensive inflammation in the gall-bladder, the mucosa being ulcerated and the lumen lined by haemorrhagic and inflamed granulation tissue. A large pigment stone was present in the common hepatic duct.

Discussion.

Controversy has raged over the years concerning the portal of entry of organisms to the gall-bladder in cases of cholecystitis.

Hæmatogenous, lymphatic, portal, hepatic and retrograde spread from the duodenum via the bile ducts all have their advocates, and have been studied intensively by many workers.

Although cholecystitis has been described many times as a complication of septicæmia, it has, to my knowledge, never been described as a direct complication of the septicæmia of severely burnt patients. Septicæmia is the most dangerous complication of burns and it most commonly occurs in the early post-burn period.

Statistics from the Brooke Army Hospital, Brooke Army Medical Centre (Artz and Reiss, 1957) show that the greatest incidence is in the first 15 post-burn days, while the eschar is still intact or is sloughing. Its incidence is very low when the wounds have progressed to the granulating stage.

This peak occurrence of septicæmia in the early post-burn period is explained by the absence of local defences

against invading bacteria during this time. As soon as granulation tissue appears, septicæmia is much more rare and much more easily controlled.

Price, in 1954, disproved the concept that full-thickness burns were sterile initially and became colonized by bacteria only when contaminated from the outside. He showed that, although the intensity of heat and the time of exposure to heat may have produced full-thickness skin burns, bacteria may survive deep in the crypts of sweat glands and hair follicles, and that these bacteria are capable of rapid proliferation.

It is of the greatest importance to realize that the bacterial count beneath a full-thickness burn eschar increases despite any form of local therapy—in this case no cultures from the surface of the eschars produced any growth until seven days after the thermal injury and the patient was showing clinical signs of septicæmia.

Outside contamination is another important source of infection—from unsterile dressings, instruments or the respiratory tract of the patient or attendants.

It is obvious from these statements that local applications are useless as a therapeutic approach to bacteria in the skin appendages—they will not penetrate the burn eschar.

The aims of therapy are therefore twofold: (i) protection from early invasion of the blood-stream; (ii) early establishment of a tissue barrier against invasive infection. Antibiotics are given systemically in an effort to achieve the first aim; early excision of dead tissue, to allow the formation of granulation tissue, and skin grafting may accomplish the second aim.

The principal therapeutic problem is the prevention of septicæmia prior to the time when a granulating barrier is established.

In the early history of burns therapy septicæmia was not mentioned as a frequent complication; it seems highly likely that the longer survival of severely burned patients, now made possible by improvements in initial fluid therapy, means that these patients simply stay alive until such a time as septicæmia is likely to occur.

From these statements it is obvious that antibiotic therapy and judicious wound care are the most important factors in the treatment and prevention of septicæmia after thermal injury. Wound care involves all efforts directed towards the early elimination of eschars, followed by wound coverage. Antibiotic therapy involves systemic administration of appropriate antibiotics, aiming at ridding the blood-stream of invading microorganisms, and also an attempt to reduce the bacterial inoculum causing persistence of septicæmia. Reduction of the feeding inoculum is the chief aim, not only in removal of the eschar but also in the local use of antibiotics and in skin grafting.

It must be immediately realized that here we are advocating the use of local antibiotics after the eschar has been removed—not before, because, as stated earlier, the bacteria in the skin appendages will not be reached by local applications through the full-thickness eschar.

In this case haemolytic anaemia was a great problem. The patient's hæmoglobin level at one stage fell from 11.0 grammes per 100 ml. to 6.6 grammes per 100 ml. in five days; he developed an easily-palpable spleen, and at autopsy a large pigment stone was revealed in the common hepatic duct. This serves to demonstrate the rapid development of haemolytic anaemia which is possible in the septicæmic state, and also the great importance of frequent blood transfusions in the treatment of these patients.

Summary.

A case of gangrenous cholecystitis with perforation and bile peritonitis as a complication of the septicæmia of burns in a fourteen-year-old boy is described. This complication occurred early in the post-burn period—14 days from the time of thermal injury.

Treatment of this complication was by cholecystostomy, intravenous therapy, naso-gastric suction and intensive intravenous administration of antibiotics. The patient lived for 14 days after this episode, but finally succumbed, from overwhelming septicæmia, on the twenty-eighth post-burn day.

A rational approach to antibiotic therapy, both systemic and local, is described, together with the local care of the burn wound.

Infection has become the cardinal problem in the treatment of extensive burns.

Acknowledgements.

I wish to thank Mr. Harold McComb, honorary plastic surgeon in charge of the burns unit, for encouragement in preparing this article and for allowing me to undertake the treatment of this patient.

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ACUTE LEUKÆMIA AFTER TREATMENT WITH RADIOACTIVE IODINE.

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THE case history is presented of a female patient who, when aged 62 years, was treated with 8 mc. of radioactive iodine (^{131}I) for thyrotoxicosis, and who presented with acute leukæmia 15 months later.

Clinical Record.

The patient, a housewife aged 62 years, was thought by her physician to have thyrotoxicosis and was referred to the Queensland Radium Institute on April 3, 1959, for the estimation of the four-hour uptake of ^{131}I . Investigation of her past history revealed that she had had a subtotal thyroidectomy 20 years previously for toxic goitre and that she had suffered from asthma for 50 years. At the time of the uptake test the main physical signs were warm hands, a fine tremor, a rapid pulse and a slightly enlarged, firm right lobe of the thyroid. No eye signs were present. She was given 20 μc . of ^{131}I orally and the four-hour uptake was 78%. After a consultation with her physician it was decided to treat her thyrotoxicosis with ^{131}I and 8 mc. were given orally on April 10, 1959. A blood count was not performed before treatment.

In the course of her subsequent follow-up she received orally three 10 μc . tracer doses of ^{131}I . They were given on July 7, September 1, and December 2, 1959. The four-hour uptake tests performed on those days gave normal results and clinically her condition had improved.

On July 3, 1960, she was admitted to the Princess Alexandra Hospital with an illness that was to prove rapidly fatal. Five weeks previously she had developed an asthmatic attack which had persisted. For the two days prior to admission she had been febrile; she had developed a continuing epistaxis and had passed blood in her motions. "Synermycin" had been prescribed. Examination showed an ill, pale, breathless woman; there

were small hæmorrhages in the lips, tongue and pharynx. On auscultation of the chest crepitations were heard over the right upper lobe, and an X-ray film of the chest revealed an opacity in that lobe. Results of routine ward tests revealed the presence of blood in the urine and the faeces. On examination of the peripheral blood the hæmoglobin level was found to be 55% (8.3 grammes per 100 ml.), with a reticulocyte count of 0.5%. A white-cell count revealed 12,000 cells per cubic millimetre, of which 6% were lymphocytes, 85% were premyelocytes and 9% were myelocytes. Ninety-one per centum of the white cells were strongly peroxidase positive. The platelet count was 6000 per cubic millimetre, with some giant forms present.

The patient was treated with penicillin and prednisone. Two days after admission to hospital she suddenly lost consciousness. The right pupil was dilated. She died within 30 minutes.

Autopsy Report.

Seven hours after death a sternal marrow aspiration was performed. The smears showed a hyperplastic, cellular marrow, with a definite increase in myeloid cells. The majority of cells were premyelocytes with occasional myeloblasts and some myelocytes. No megakaryocytes were seen.

At autopsy the main features were widespread hæmorrhages and abnormal findings in the marrow, thyroid and lung.

A large intracerebral hæmorrhage was found in the right cerebral hemisphere involving the temporal and parietal lobes. Hæmorrhages were also found in the skin, epiglottis, trachea, right lung, stomach, duodenum, jejunum and kidneys. There was no hæmorrhage into the adrenals.

The sternal marrow showed macroscopically an increase of cellularity. There was a slight increase in the marrow of the upper two-thirds of the shaft of the right femur, but the head of the femur was normal. On microscopic examination sections of femoral and sternal marrow were seen to be cellular and uniformly infiltrated with immature white cells. Megakaryocytes were very much reduced in numbers. Some hæmorrhage had occurred into the marrow.

The left lobe of the thyroid gland was absent and the right lobe was small, weighing 4 grammes. Microscopically there was some autolysis. There were numerous follicles, which were quite small. Some of the nuclei were bizarre and hyperchromatic and some of the cells were large and contained large nuclei and eosinophilic cytoplasm, such as is seen in the Askanazy cell. There was some increase in fibrous tissue with an occasional thrombosed vessel. No lymphoid infiltration had occurred. The changes were consistent with post-irradiation atrophy of the thyroid.

The right lung showed pneumonic consolidation of the upper lobe.

A summary of the autopsy findings is as follows: (i) acute myeloblastic leukæmia; (ii) secondary thrombocytopenic purpura; (iii) right cerebral hæmorrhage; (iv) right upper-lobe pneumonia; (v) post-irradiation atrophy of the thyroid.

Discussion.

Pochin (1960) has reviewed and discussed the 18 known cases of leukæmia in patients previously treated with radioactive iodine for thyrotoxicosis. He makes it clear that it is not proven that ^{131}I is the cause. Our patient, who appears to represent the first case reported in Australia, received a total of 8.05 mc. ^{131}I and died 15 months after the treatment dose. This is comparable with some of the cases mentioned in Pochin's excellent review and investigation. A feature of this case is the very short latent period as compared with that for accepted leukæmogenic factors—for example, atomic bomb explosions with their higher marrow doses.

Summary.

A female patient, aged 62 years, died of acute leukæmia 15 months after investigation and treatment with ^{131}I for thyrotoxicosis.

Acknowledgements.

Thanks are due to Dr. K. Aaron, Dr. A. G. S. Cooper and Dr. J. H. Little, in whose departments this work was performed, and also to Sir Alexander Murphy, who made the patient's past history available to us.

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Reviews.

Cancer of the Rectum. Edited by Cuthbert E. Dukes, O.B.E., M.D., M.Sc., F.R.C.S.; "Neoplastic Disease at Various Sites", Volume III, edited by D. W. Smithers, M.D., F.R.C.P., F.F.R.; 1960. Edinburgh and London: E. & S. Livingstone. 9½" x 6¼", pp. 320, with illustrations. Price: 50s. net (English).

This is the third volume of a series in course of presentation under the general editorship of Professor D. W. Smithers of the University of London, and it confirms the hopes that the inspiration of this radiotherapist-cancer philosopher would eventually make worthy contributions to British medical literature. The word "eventually" is used to remind readers that these volumes were planned some years ago, and that their compilation has been a particularly careful and thoughtful process. In this book of some 300 pages, Dukes has succeeded in presenting the ideas of 18 colleagues, including the foremost names in this field of surgery in England. The four years spent on its preparation were well spent, and the volume is an outstanding production. It is a "must" for all who are interested in rectal surgery.

There is nothing calling for criticism in this book, and it would almost be surgical heresy to fail to endorse the views of these unchallenged experts. There are numerous illustrations and tables, and the chapters on statistics and statistical methods are valuable inclusions. The production in the technical sense is a further tribute to the reputation of the publishers.

The Year Book of Ophthalmology (1960-1961 Year Book Series). Edited by William F. Hughes, M.D.; 1961. Chicago: The Year Book Publishers Inc. Melbourne: W. Ramsay (Surgical) Ltd. 7½" x 5", pp. 376, with illustrations. Price: £4 13s. 6d.

THIS Year Book, edited by William F. Hughes, opens with a special article on "Management of Uveitis" by the editor, a useful summary of the considerable amount of new material on this important disease. The section headings remain substantially unchanged from previous years. The inclusion of some reference to the basic sciences adds to the scope of this work. We note that in the "miscellaneous" section there is an account of light coagulation, and a good deal of interesting material is to be found in the study of senescence in ophthalmology, an abstract of work done at the University of Ghent by J. François. Altogether this Year Book maintains the standards set by preceding editions.

Questionarium Medicum. By F. Meyboom; 1961. Amsterdam, London, New York, Princeton: Elsevier Publishing Company. 7½" x 5¼", pp. 203. Price: 30s. (English).

In the foreword to this little book, it is stated that the need has been recognized for a series of multilingual technical glossaries bearing on the principal subjects discussed at international conferences. A number of glossaries are therefore to appear (it is hoped that several will appear annually), dealing with subjects likely to be discussed at conferences where trained interpreters are used. In order to emphasize the international and scientific nature of the glossaries, they are being sponsored by the Interpreters' School of Geneva University, the Auslands- und Dolmetscher-Institut of Mainz University, Germersheim, the Institute of Languages and Linguistics, School of Foreign Service, Georgetown University, Washington, and the Scuola di Lingue Moderne per Traduttori ed Interpreti di Conferenze of Trieste University. The supervision and coordination of the project are being undertaken by Professor Jean Herbert, formerly Chief Interpreter of the United Nations.

The present book is essentially a phrase book dealing with medical examination. It has been prepared by F. Meyboom, who has been advised by "highly competent physicians", and the translation of the questions she has framed has been done by experts. The questions are arranged in sections, dealing respectively with administration, medical examination, surgical examination, neurological examination, examination by skin specialists, oculists and oto-rhino-laryngologists, admission to hospital, nursing. Each question bears the same number in the various language sections; the languages provided for are English, French, Italian, Spanish, Portuguese, German, Dutch, Norwegian, Swedish, Finnish, Polish, Russian, Greek, Chinese, Japanese, Malay and Esperanto. The questions appear to cover the essentials of their several applications. They are so worded that the patient can answer them by simply holding up the required number of fingers, or by "yes" or "no". If necessary, the question can be shown to the patient, who may read it for himself. (We can imagine circumstances in which heartfelt sighs of relief will be breathed at this provision.)

This glossary seems likely to be most useful. It is pleasantly produced on good-quality paper and in particularly clear type; it is easy to refer to, and of a convenient size to handle. Professor Herbert concludes his preface with a request which we now pass on:

We fully realize that a vocabulary of this kind always leaves ample room for improvement, and we should be grateful to all doctors who would take the trouble to send us their suggestions.

The Year Book of Drug Therapy (1960-1961 Year Book Series). Edited by Harry Beckman, M.D.; 1961. Chicago: The Year Book Publishers Inc. Melbourne: W. Ramsay (Surgical) Ltd. 7½" x 5½", pp. 588. Price: £4 13s. 6d.

THIS Year Book opens with a section 72 pages long, printed on blue paper, and entitled "A Critical Evaluation of the Year's New Drugs". The literary style of the editor, Harry Beckman, is discerned in it—with pleasure, we may add. The section has its own index, and provides a most useful appraisal of the neonates among drugs of all types. As is only to be expected, the rest of the book, which deals with the year's literature in the field of drug therapy, is growing apace. The editor has a gigantic task in keeping abreast of published work and providing adequate summaries and comments; we congratulate him on the finished product.

The Year Book of Obstetrics and Gynecology (1960-1961 Year Book Series). Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., F.I.C.S. (Honorary); 1961. Chicago: The Year Book Publishers Inc. Melbourne: W. Ramsay (Surgical) Ltd. 7½" x 5½", pp. 576. Price: £4 8s.

ONCE again this Year Book has J. P. Greenhill as its editor, and once again his copious annotations add materially to the value of the abstracts presented. The book is, as usual, divided into two main sections. The first, "Obstetrics", has a new sub-section, "Problems in Evolution of Obstetrics", in which some ideas to alleviate the overworking of obstetricians are put forward. For the rest, the sub-headings under "Pregnancy", "Labor", "Puerperium" and "The New-born" are unchanged. The second section "Gynecology", has the following sub-sections: "General Principles and Diagnosis", "Infertility", "Operative Gynecology", "Infections", "Benign Tumors", "Malignant Tumors", "Menstrual Disorders", "Endocrinology". As in previous years, we recommend this book to all medical practitioners working in obstetrics and gynecology. Although much of its contents will primarily interest the specialist, there is a great deal also for the family doctor.

The Year Book of General Surgery (1960-1961 Year Book Series). Edited by Michael E. De Bakey, B.S., M.D., M.S., with a section on anesthesia edited by Stuart C. Cullen, M.D.; 1961. Chicago: The Year Book Publishers Inc. Melbourne: W. Ramsay (Surgical) Ltd. 7½" x 5", pp. 616, with many illustrations. Price: £4 8s.

THIS Year Book is a further tribute to the adventurers in surgery, who are increasingly invading organs and tissues that were regarded as sacrosanct not so many years ago. Experimental surgery can be much assisted by the breeding and maintaining of germ-free animals, and one abstract shows how this is done. A note by the editor, Michael E. de Bakey, points out that colonies of germ-free animals have now been established in several centres; the technique is "exacting, time-consuming and tedious". A constant problem on which more literature is presented is that of staphylococcal infection following surgical procedures. There are only minor changes in the major subject headings—"The Appendix" and "Hernia" have been dropped and "The Genitourinary Tract" has been added. The section on anes-

esthesia has again been edited by Stuart C. Cullen. The subsections are the same in number, but "Ventilation" has become "Respiration", and the last four are now "Neuro-muscular Block", "Anesthetic, Diagnostic, Therapeutic Block", "Spinal and Peridural Anesthesia" and "Miscellaneous".

This Year Book is a happy hunting ground for the general surgeon; we suggest that, even if he does not find in it the immediate answer to a pressing problem, he will certainly be shown where he may look for it.

The Year Book of Urology (1960-1961 Year Book Series). Edited by William Wallace Scott, M.D., Ph.D.: 1961. Chicago: The Year Book Publishers Inc. Melbourne: W. Ramsay (Surgical) Ltd. 7½" x 5", pp. 400, with illustrations. Price: £4 8s.

THE editor, W. W. Scott, is pleased with the response to the suggestion made in his introduction to the last volume, that he would welcome the help of urologists and physicians with special interests. He has been able, "in this initial cooperative venture", to call on 12 authorities (the word is exact) each to write an introduction to a chapter and to make any comments they wished on the articles mentioned in it. The result, from the reader's point of view, is a little like the report of a round-table conference. However, most such reports are delayed for varying periods of time; this is far from being the case with this review of the literature—it is commendably up to date. The wide scope of the subject matter covered and the pleasant informality of the presentation make this Year Book valuable and easy to read. We recommend it.

The Year Book of the Ear, Nose and Throat (1960-1961 Year Book Series). Edited by John R. Lindsay, M.D., with a section on maxillofacial surgery edited by Dean M. Lierle, M.D., and William C. Huffman, M.D.: 1961. Chicago: The Year Book Publishers Inc. Melbourne: W. Ramsay (Surgical) Ltd. 7½" x 5", pp. 352, with illustrations. Price: £4 13s. 6d.

This book is divided into three sections—"The Ear", "The Nose and Throat" and "Maxillofacial Surgery". The first two sections are edited by John R. Lindsay, who is the editor-in-chief. The first section has subsections on vestibular function and vertigo; hearing and hearing tests; tubal function, inflammatory middle ear disease, facial paralysis and tumours; otosclerosis, fenestration and stapes mobilization. The second section covers the following subjects: the nose and paranasal sinuses; the mouth, oropharynx, nasopharynx and salivary glands; the larynx and neck; the hypopharynx and oesophagus; the trachea, the bronchi and tracheotomy; allergy, miscellaneous. The section on maxillofacial surgery is edited jointly by Dean M. Lierle and William C. Huffman, and is thoroughly comprehensive. We have learnt over the years to expect from the Year Book series a high standard of coverage of the year's literature in the field under review. The present volume in no way departs from this standard.

Outline of Fractures Including Joint Injuries. By John Crawford Adams, M.D., F.R.C.S.: third edition: 1960. Edinburgh and London: E. & S. Livingstone Ltd. 8½" x 5½", pp. 276, with illustrations. Price: 27s. 6d.

THIS commendably brief book, designed for the senior medical student, the general practitioner and the physiotherapist, has apparently met a need, as it has gone into three editions since 1957. The latest edition has been kept to its former size in the process of being brought up to date and generally revised. It remains a useful book for its stated purposes.

Neurology. By Roy R. Grinker, Paul C. Bucy, M.D., and Adolph L. Saks, M.D.: fifth edition: 1960. Oxford: Blackwell Scientific Publications Ltd. 9½" x 6½", pp. 1398, with 495 illustrations. Price: £9 16s.

WHEN Roy R. Grinker produced the first edition of this book in 1933, he described it as "an attempt at a correlation of certain biological data which are considered of importance to the study of the human nervous system in health and in disease". He hoped in this way to counter the unfortunate fact that neurology tends to be taught in separate and unrelated compartments of the medical curriculum, to the considerable loss of clinical neurology. The book was well received, and is now in its tenth edition. For this latest edition, which has been completely revised, the two co-authors, Paul C. Bucy and Adolph L. Saks, have been responsible with the assistance of a large number of consultants. The result is an up-to-date major work on clinical

neurology which, while not exhaustive, covers a great deal of ground.

Guide to the Study of the Anatomy of the Shark, *Necturus* and the Cat. By Samuel Eddy et alii: Third Edition: 1960. New York and London: John Wiley & Sons Inc. 9" x 6", pp. 158, with illustrations. Price: \$3.50.

THIS small, paper-covered volume was originally designed for a course in comparative anatomy, covering one quarter, at the University of Minnesota. The three forms selected represent important stages of vertebrate development. Thus the shark is an example of a primitive fish, *Necturus* marks the transition from water to land life and the cat represents the mammal, the highest point of vertebrate development. The skulls of *Amia* and a teleost fish have also been included to lay the foundation for a study of tetrapod skulls. This is a dissecting manual, and those of us who have battled with similar manuals couched, it would seem, in deliberately mysterious terms, would be refreshed by its clarity. There are several drawings of the more difficult stages of the dissections, an index is included and at the end of the book is a series of blank pages for the student's own notes or drawings. In the course for which the book was written, drawings were not regarded as essential parts of the training—an unlabelled atlas is recommended for reference.

In this third edition, a study of the muscles of the dogfish shark has been added, but the authors apologize for not including many other animal types which have been requested by instructors using this book, stating that the course was intended to be, and should remain, a short one.

Poliomyelitis: Papers and Discussions Presented at the Fourth International Poliomyelitis Conference. Compiled and edited for the International Poliomyelitis Congress, 1958. Philadelphia, Montreal: J. B. Lippincott Company. 10" x 6½", pp. 702, with many illustrations. Price: 82s. 6d.

THIS volume contains the papers presented at the Fourth International Poliomyelitis Conference, held in Geneva in 1957, together with verbatim reports of the discussions which followed their presentation. The proceedings of the conference included discussions on many different phases of poliomyelitis, but the centres of interest were vaccination against the disease, new information about enteric viruses which produce diseases simulating poliomyelitis, and general considerations of viruses and of cultures of mammalian cells. New techniques in the diagnosis of poliomyelitis were discussed. Three sessions were devoted to the care of patients severely stricken by poliomyelitis, and another to group and home care of patients with respiratory or extensive paralysis. Over thirty countries were represented at the conference, and papers were contributed by many of the world's leading authorities on the subject. The volume is excellently produced on good-quality paper, and the illustrations are of a high standard. All papers and discussions are presented in the English language, and unlike some volumes of this kind, there is a comprehensive index.

Sédan's Re-Educative Treatment of Suppression Amblyopia: Being an abridged English version of Jean Sédan's *Post Curo de l'Amblyopie Rééduquée*, by T. Keith Lyle, C.B.E., M.D., M.Ch., M.R.C.P., F.R.C.S., Cynthia Douthwaite, D.B.O., and Jill Wilkinson, D.B.O.: 1960. Edinburgh and London: E. & S. Livingstone Ltd. 11" x 8½", pp. 148, with illustrations. Price: 25s. net (English).

THIS book, in its original French edition, was in use in the Orthoptic Department at Moorfields Eye Hospital (High Holborn Branch) for two years and was found of great value. Dr. T. Keith Lyle and two of the orthoptists therefore prepared this English edition so that it might be of more value to patients with no knowledge of French. It is intended for use under guidance in carrying out home exercises.

Pharmacopœa Internationalis. First edition, supplement: 1959. Geneva: World Health Organization. 9½" x 6½", pp. 244, with many tables. Price: £1 5s. (sterling).

THIS supplement to Volumes I and II of the International Pharmacopœia, which appeared in 1951 and 1955, completes the first edition of this venture. The supplement contains 94 monographs and 17 appendices. The former include specifications for some hormone preparations, antimalarials and antibiotics not given in the earlier volumes, for the contrast media acetrizole acid and iopanoic acid, and for certain pharmaceutical forms of the antibiotics described in Volume II. The appendices contain lists of reagents,

tables of doses, and descriptions of assay methods. In addition, they deal with various subjects not covered in the previous volumes, such as the preparation of buffer and isotonic solutions, the determination of pH and of resistivity, and the testing of glass containers for injections. They also include a revised list of International Biological Standards and Reference Preparations and a list of so-called "authentic chemical substances"—that is, substances needed for reference purposes which can be characterized by physico-chemical methods. Some amendments to Volumes I and II are presented in an annex, and, finally, a detailed index to the whole of the first edition is provided.

The International Pharmacopoeia constitutes a collection of recommended specifications, which are not intended to have legal status as such in any country, but are offered to serve as references so that national specifications can be established on a similar basis in any country. It is intended to be of use to all national and other authorities dealing with specifications for pharmaceutical preparations, as well as to manufacturing firms and laboratories dealing with the quality control of such products.

Tumors of the Odontogenic Apparatus and Jaws. By Joseph L. Bernier, D.D.S., M.S., F.D.S., R.C.S., England; *Atlas of Tumor Pathology*, Section IV, Fascicle 10a; 1960. Washington: Armed Forces Institute of Pathology. 10 1/2" x 8", pp. 112, with many illustrations. Price: \$1.00.

This fascicle of the "Atlas of Tumor Pathology", which is being published by the American Armed Forces Institute of Pathology, deals with tumours of the odontogenic apparatus and jaws, and consists of a series of beautifully produced plates, including photomicrographs, skiagrams and two excellent colour plates illustrating various intraoral swellings. The legends are printed on facing pages, and there is a relatively brief descriptive text. This part of the "Atlas" should be of great value to students of dental pathology of all ages.

Proceedings of the First International Congress of Neurological Sciences, Volume III, Electroencephalography, Clinical Neurophysiology and Epilepsy. Edited by Ludo van Bogaert and J. Radermecker, 1959. London, New York, Paris, Los Angeles: Pergamon Press. 10 1/2" x 7 1/2", pp. 718, with many illustrations.

This is Volume III of the proceedings of the First International Congress of Neurological Sciences held in Brussels in July, 1957. The Congress was an historic occasion, as it brought together for the first time all branches of neurology. It included the Sixth International Congress of Neurology, the Third International Congress of Neuropathology, the Fourth International Congress of Electroencephalography and Clinical Neurophysiology, the First International Congress of Neurological Surgery, the Eighth Reunion of the International League against Epilepsy and the Fifth Neuroradiological Symposium. The proceedings are therefore understandably bulky, and are planned to appear in five volumes, of which this is the first to be published. It contains the 135 papers presented at the Fourth International Congress of Electroencephalography and Clinical Neurophysiology and the Eighth Meeting of the International League against Epilepsy. The papers are published in one of three languages, English, French and German.

Personality and Success in Marriage. By R. E. Morton; 1961. London: William Heinemann, Medical Books Ltd. 7 1/2" x 5", pp. 110. Price: 10s. net (English).

The aim of this book is to give engaged people some idea of their suitability for marriage and their chance of success with a particular person, as well as to furnish marriage bureaux (for which the author recognizes a real need) with a guide to the selection of suitable partners. It is the contention of the author that marriage need not be the proverbial lottery, but a way of life for which careful planning and a wise choice can ensure a reasonably certain result.

First gross defects, such as homosexuality, masochism and parental fixation, are dealt with, and for these, of course, medical help is advised.

In common with other authorities, this author believes that personality and character defects, such as emotional immaturity, alcoholism and instability, are the main features in marriage failure. After these come sexual incompatibilities arising out of prudery, frigidity and impotence, and then minor factors, such as poor housing, financial difficulties and in-law problems, which are often

given the major share of the blame. It is pointed out that poor housing and inadequate finance are usually the result of personality defects, the incompetent, lazy, unintelligent, wasteful or accident-prone person being the most likely and most usual candidate for such a situation.

The main feature emphasized is that a beloved and happy child makes for a happy, mature and integrated adult, capable of achieving a lasting marriage partnership and producing in turn beloved and happy children. After that, mental compatibility ranks highest in the list of desirable attributes, and this depends on similarity of background, religion, education, intelligence, interests, hobbies and temperament.

In conclusion, the author praises the work of marriage-guidance councils and advocates that all engaged couples should seek advice before marriage on the very vital subject on which they are traditionally and truly blind.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Congenital Anomalies of the Face and Associated Structures: Proceedings of an International Symposium", compiled and edited by Samuel Pruzansky, D.D.S., M.S.; 1961. Springfield: Charles C. Thomas; Oxford: Blackwell Scientific Publications. 9" x 6", pp. 386, with illustrations. Price: £5 6s.

"The Role of Immunization in Communicable Disease Control", World Health Organization Public Health Papers No. 8; 1961. Geneva: World Health Organization. 8 1/2" x 5 1/2", pp. 118. Price not stated.

The British Association, Granada-Guildhall Lectures, 1960: "The Language of the Gene", by G. W. Beadle; "Communicating with Calliban", by H. J. Eysenck; "The Human Receiving System", by Lord Adrian, O.M.; 1961. London: University of London Press Ltd. 7 1/2" x 4 1/2", pp. 106, with several illustrations. Price: 6s. 9d.

"A Chemical Approach to Food and Nutrition", by B. A. Fox, B.Sc., A.R.I.C., and A. Cameron, B.Sc., A.R.I.C.; 1961. London: University of London Press Ltd. 8 1/2" x 5 1/2", pp. 326, with illustrations. Price: 54s. 6d.

"A Guide to Cardiology", by J. C. Leonard, M.D. (London), M.R.C.P. (London), and E. G. Galea, M.B. (Queensland), M.R.C.P. (London), M.R.A.C.P.; 1961. Edinburgh, London: E. & S. Livingstone Ltd. 8 1/2" x 5 1/2", pp. 268, with illustrations. Price 27s. 6d.

"The Pathology of Ionizing Radiation", by Shields Warren, M.D., Sc.D., LL.D.; 1961. Springfield: Charles C. Thomas; Oxford: Blackwell Scientific Publications. 9" x 6", pp. 42, with illustrations. Price: 24s.

"Cerebral Palsy in Childhood and Adolescence: A Medical, Psychological and Social Study", edited by J. L. Henderson, M.D., F.R.C.P.E.; 1961. Edinburgh, London: E. & S. Livingstone Ltd. 8 1/2" x 5 1/2", pp. 404, with illustrations. Price: 35s. net.

"The Genesis of the British National Health Service", by J. and S. Jewkes; 1961. Oxford: Basil Blackwell. 8 1/2" x 5 1/2", pp. 68. Price: 6s. 6d. net.

"Functional Behaviour of the Microcirculation", by B. W. Zweifach, Ph.D.; 1961. Springfield: Charles C. Thomas; Oxford: Blackwell Scientific Publications. 9" x 6", pp. 150, with illustrations. Price: 56s.

"The Physiology of Emotions: Report of the Third Annual Symposium of the Kaiser Foundation Hospitals in Northern California, San Francisco", edited by Alexander Simon, M.D., Charles C. Herbert, M.D., and Ruth Straus, with a preface by Clifford H. Keene, M.D.; 1961. Springfield, Illinois: Charles C. Thomas; Oxford: Blackwell Scientific Publications. 9" x 6", pp. 248 with illustrations. Price: 52s.

"Clinical Diagnosis by Laboratory Examinations", by J. A. Kolmer, M.S., M.D., Dr.P.H., Sc.D., LL.D., F.A.C.P., F.A.C.D. (Hon.); third edition, 1961. New York: Appleton-Century-Crofts, Inc. 9 1/2" x 6 1/2", pp. 576, with illustrations. Price: \$10.00.

"The Health of the Aged: An Investigation into the Health and a Number of Social and Psychological Factors Concerning 3149 Aged Persons in The Netherlands, Carried out by 374 General Practitioners under the Direction of the Organization for Health Research T.N.O.", by R. J. Van Zonneveld, M.D.; 1961. Assen: Van Gorcum & Comp. N.V.-Dr. H. J. Prakte & H. M. G. Prakte. 9 1/2" x 6 1/2", pp. 440. Price: f 22.50.

The Medical Journal of Australia

SATURDAY, SEPTEMBER 30, 1961.

POLIOVIRUS VACCINES.

As soon as the development of tissue-culture techniques had made it possible to grow polioviruses in large quantity, workers began to examine the possibility of producing vaccines against all three types of virus in sufficient quantity for mass immunization of whole populations. Different groups of workers studied the production of vaccines of different types. Salk's group developed an inactivated virus vaccine to be administered parenterally as a series of injections of mixtures of all three types of virus. Three other groups led by Cox, H. Koprowski and A. B. Sabin have been concerned with the development of a live attenuated virus vaccine for oral administration. Although the first vaccine to be tested experimentally on human subjects was the type 2 attenuated virus developed by Koprowski (S. A. Plotkin *et alii*¹), the development of the inactivated vaccine prepared from fully virulent virus was, in general, more rapid, and by 1953 a vaccine had been developed which was given an extremely thorough field testing in 1954. The model report on this trial, prepared by T. Francis and his colleagues,² showed clearly the efficacy and safety of the batches of vaccine used in the test.

After a serious accident when the vaccine was first released for commercial exploitation, the regulations for safety testing were strengthened, and there has been no evidence that poliomyelitis has been provoked by formaldehyde-inactivated vaccine since 1956. The evidence is overwhelming that individuals who have received at least a full course of three injections of a good batch of vaccine, which has been properly stored, have their chance of developing paralytic poliomyelitis reduced by at least 80%. Recent improvements in the antigenicity of this vaccine appear to have yielded even better protection. How long this immunity lasts is still not clear, but it is now generally recognized that a fourth dose two to three years after the third is advisable for children vaccinated during the first year of life, and most workers also regard this as desirable for all. It has recently been suggested by the Surgeon General's Committee on Poliomyelitis Control of the U.S.A.³ that the young children should receive a fifth injection.

While the Salk vaccine gives excellent protection to the individual, it has certain weaknesses from the point of view of the community. Immunity to polioviruses can be divided into two parts. There is a humoral immunity associated with the presence of antibodies in the serum which protects the individual from spread of the virus to the central nervous system. This type of immunity is conferred by the Salk vaccine. There is also a local immunity of the cells of the intestinal tract which stops the viruses becoming established at all. This type of immunity is given by a natural infection with a live virus, but not by the Salk vaccine, although there is some evidence that people fully immunized with a good batch of inactivated vaccine may shed less virus from the oropharynx than non-immune individuals in the same community (P. E. Wehrle *et alii*^{4,5}).

Because of this, and because of the cheapness and ease of administration of a live, attenuated orally administered vaccine, the attempts to produce one which will be both safe and effective have continued. The ideal vaccine would be one which was so attenuated that it would never cause symptoms, and so genetically stable that it would not regain neurovirulence with repeated human passage. It should have high infectivity, so that it would readily establish itself when given by mouth in a relatively small dose, and it should produce a high-grade local and humoral immunity. Finally, it should be free from extraneous viruses. By now all three groups have produced vaccines which have had extensive trials. The Sabin vaccine has been adopted as the main immunizing agent in the U.S.S.R., while Koprowski's vaccine has been accepted in Poland. Each of the three vaccines has been used on more than two million people, and there have been no clear-cut cases of poliomyelitis attributable to the vaccines either in the immunized persons or in their contacts (A. J. Rhodes⁶).

Live poliovirus vaccines differ from other vaccines used in human medicine in that the virus is shed for a considerable time and in quite high titre in the faeces of the immunized individual (P. F. Wehrle *et alii*,⁷ I. Dömök *et alii*⁸). This has, indeed, been regarded as an important advantage in that the benefits of the immunization may be extended to those who have failed to cooperate in the immunization campaign. However, the evidence of Wehrle and his colleagues suggests that the virus is less transmissible by the degree of contact found in schools than wild virulent virus (J. A. R. Miles⁹), although it more nearly approaches the infectivity of wild virus in the close contact conditions of the home (D. M. Horstmann *et alii*¹⁰).

The Belfast group^{11,12} has recently brought further evidence of increased neurovirulence of Sabin types 1 and 2 viruses following multiplication in the human intestinal tract. They found a steady increase in neurovirulence for monkeys in the type 2 virus during five weeks in which

⁴ *Pediatrics*, 1961, 27: 748 (May, Part I).

⁵ *Ibidem*, page 762.

⁶ *Canad. J. Publ. Hlth.*, 1961, 52: 45 (February).

⁷ *Pediatrics*, 1961, 27: 755 (May, Part I).

⁸ *Brit. med. J.*, 1961, 1: 1418 (May 20).

⁹ *J. Hyg. (Lond.)*, 1958, 56: 347.

¹⁰ *J. clin. Invest.*, 1955, 34: 1573.

¹¹ *Brit. med. J.*, 1961, 2: 259 (July 29).

¹² *Ibidem*, page 269.

¹ *J. Amer. med. Ass.*, 1959, 170: 8 (May 2).

² Report, National Foundation for Infantile Paralysis, New York, 1957.

³ *Publ. Hlth. Rep. (Wash.)*, 1961, 76: 375 (May).

it could be isolated from the intestinal tract of infants. There was no demonstrable alteration in its infectivity for man. These results suggest that despite the overwhelming evidence that there has been no paralytic poliomyelitis due to Sabin viruses among the huge populations vaccinated with these strains in the U.S.S.R., Czechoslovakia, Mexico (M. P. Chumukov *et alii*,¹³ A. A. Smorodintsev *et alii*,¹⁴ V. Skovranek,¹⁵ M. Ramos-Alvarez *et alii*¹⁶) and more recently Cincinnati (E. R. Porter and R. E. Wehr¹⁷), careful surveillance of strains of virus isolated from contacts of the vaccinated should be continued for the time being. A theoretical fear which has been widely expressed is that pregnant women might prove susceptible to paralysis on contact infection from their own young children, or that embryopathies might arise. These complications have been constantly under consideration, and, if they occur, they must be extremely rare, or they would have been clearly demonstrated by now. The Cincinnati trial, amongst others, answers the doubts about releasing oral vaccine in a community with a high proportion of susceptible adults.

The cultures of monkey kidney cells used to propagate vaccine virus are, from time to time, infected with viruses of simian origin. The commonest of these, the vacuolating agent, does not appear to be able to multiply in man (D. I. Magrath *et alii*¹⁸), but until more is known about them it is obviously desirable that vaccines intended for oral administration to man should be free of them. This freedom may be difficult to achieve.

The success in establishing live virus vaccines in the human intestinal tract has varied greatly in different reported trials. It has become apparent that the presence of other enteroviruses (Coxsackie, ECHO or wild type polioviruses) may interfere with the establishment of the vaccine virus and lead to failure of immunization. This means that the success of a mass campaign may depend on the absence of epidemic enterovirus infection in the community, and is a particular reason for recommending that campaigns should be concentrated on the late winter and spring. Provided that no other enterovirus is present and an adequate dose of active attenuated virus is introduced, a very high proportion of individuals become infected. In the recent Hungarian studies,⁸ even when 35% of individuals were carrying enteroviruses at the time of the first vaccination, over 80% excreted the vaccine virus. Provided the viruses establish themselves in the intestinal tract, they stimulate both the production of humoral antibodies and the development of local immunity.

Protection for the individual is of the same order as that given by the Salk vaccine, although it may be longer lasting, but the local immunity means that when a wild type virus is introduced to an immunized community the number of individuals capable of carrying virus may be too small to enable it to become established, and, therefore, many of the advocates of the orally administered vaccines hope that, if they are used sufficiently widely and

vigorously, polioviruses may finally be completely eradicated.

The tendency of the viruses to recover neurovirulence on human passage means that the safest way to administer them is through mass campaigns in which the majority of the community are vaccinated during a brief period, preferably about a fortnight. The intrinsic difficulties of this sort of campaign in the scattered populations of rural Australia make it clear that there will be a large field for the Salk vaccine for some time to come. In contrast, New Zealand, where the difficulties of communication are less, is planning a vigorous campaign using orally administered vaccine for next year.

There is one field in which the orally administered vaccine has an unchallenged position. While a vaccine virus is established in the intestinal tract it will interfere with infection by a wild virus, just as an established wild virus can interfere with the vaccine. In the face of an epidemic, a vigorous campaign using either monovalent or trivalent live virus can stop the spread of the wild type and halt the epidemic. It may well be that, in the near future, all departments of health will hold stocks of live virus for this purpose.

The work which has been done on poliovirus vaccines for oral administration has by now shown that, when administered with suitable precautions, they are safe and effective and have, from the public-health point of view, certain advantages over the Salk vaccine. While there is still an extensive field for the use of the Salk vaccine, it seems probable that, over the next few years, it will be steadily supplanted as improvements are made on the types of oral vaccine available.

The subject is at present being actively discussed in all countries where the use of Salk vaccine is current policy. In general, there is an understandable air of caution about suggesting any change in a policy which has, to date, proved itself so signally successful.

Comments and Abstracts.

THE ÆTIOLOGY OF DUPUYTREN'S CONTRACTURE.

THOUGH it is practically 130 years since Baron Dupuytren published the first adequate account of the condition by which he is chiefly remembered, its causation is still a matter in dispute, as is shown in a recent discussion by P. Clarkson¹. In this paper the author is mainly concerned with the issue of whether or not trauma should be regarded as an important factor in the causation of Dupuytren's contracture. His discussion is based on a review of the literature on this point, and on the answers received from a score of leading surgeons from eleven different countries, to whom he had written to obtain their views on the question. Clarkson points out that Dupuytren opened the argument by attributing the contracture to chronic occupational trauma. This view was for long uncritically accepted, but towards the end of the century doubts began to be raised, and by the 1930's the pendulum had swung in the opposite direction, trauma being dismissed as irrelevant to the ætiology of the condition. The latter view still tends to prevail in many quarters, but Clarkson suggests that it rests too much on clinical opinion and

¹ *Guy's Hosp. Rep.*, 1961, 110: 52 (Number 1).

¹³ 2nd International Conference on Live Poliovirus Vaccine, Pan-American Health Organisation, Scientific Publication, No. 50, 413 (1960).

¹⁴ *Ibidem*, page 482.

¹⁵ *Ibidem*, page 507.

¹⁶ *Ibidem*, page 386.

¹⁷ *Publ. Hlth. Rep. (Wash.)*, 1961, 76: 369 (May).

¹⁸ *Brit. med. J.*, 1961, 2: 287 (July 29).

on comparisons of uncontrolled series of cases, and that it is unchecked by modern histological, biochemical and other techniques. He states that there is a growing opinion that, while trauma is certainly not the sole cause, it may precipitate or aggravate the condition in those disposed to it by inheritance.

Clarkson then lists 15 surgeons, headed by no less an authority than Sir Archibald McIndoe, who have committed themselves to the proposition that trauma is not a cause of precipitation or of aggravation of the disease. Against this, he quotes seven others who expressed the belief that precipitation of Dupuytren's contracture by trauma was possible and gave specific examples. He then discusses four cases of his own, in two of which Dupuytren's disease followed a neurological lesion which caused immediate flexion of the medial digits, while of the other two, in one the lesion followed a palmar burn, in the other it followed a crush injury; in both the latter cases the injury was treated in flexion.

Clarkson also ascertained the situation in relation to pensions. He found that the Ministry of Pensions took the view that Dupuytren's disease is always constitutional, but that if there had been a preexisting major local injury the lesion might be considered a traumatic contracture, and that if a job caused recurrent minor trauma over a long time, the Ministry might very rarely consider the trauma aggravating. The Industrial Injuries Tribunal took an even less lenient view. For this body, Dupuytren's disease was always considered constitutional and hereditary, and only in the most exceptional cases were patients with the disease considered to have had their condition aggravated by trauma.

In his conclusions Clarkson states that the existence of an hereditary predisposition to the condition should be accepted as being beyond dispute. In the several series quoted by him it had been considered to be present in 15% to 40% of cases. He also submits that single trauma, severe or otherwise, or repeated trauma, can produce Dupuytren's disease in predisposed patients who might otherwise not have developed the disease. He goes on to suggest that the role of trauma as a precipitating, and perhaps as an aggravating, factor in Dupuytren's disease, in those predisposed by heredity, should be reconsidered in relation to pension rights and industrial claims. He puts forward three propositions in this regard:

1. A single injury on the medial palm, open or closed, with or without fracture, if closely related in time and site to nodules, particularly if the injury is ever treated in flexion of medial digits, can precipitate the disease in a predisposed patient.

2. A neurological lesion—at ulnar, spinal or cerebral levels—causing finger contracture can be followed by a true Dupuytren's disease in a predisposed patient; that is, it can be followed by nodules with a "typical" histology—all "precipitated" by the neurological lesion.

3. Aggravation of Dupuytren's disease by repeated small trauma in a predisposed patient is more doubtful. There has been no work equal in range and depth to that of Skoog. My belief is that he will be proved right in believing that repeated small trauma can be an important aggravating factor.

Finally, Clarkson offers some pertinent comments on the treatment of the condition. His short paper sheds a useful light on an old but still unresolved problem, and it also has interesting medico-legal implications.

ABDOMINAL DECOMPRESSION IN LABOUR.

SINCE Professor O. S. Heyns¹ of Johannesburg first used abdominal decompression to shorten labour and reduce pain, this technique has been the subject of research in several countries. The principle of the method is that during contraction the ellipsoid uterus tends to become spherical, rising forward and eliminating the angle between

the upper and lower segments. A tense abdominal wall will resist these changes and the contracting uterus will expend a portion of its energy in overcoming this resistance. Methods of relaxing the abdominal wall include relaxation exercises, hypnosis and the use of sedative drugs. Decompression produces this by mechanical means and requires only the mother's cooperation, not her emotional involvement.

The original apparatus consisted of a plastic suit extending from the armpits down to enclose the feet, and separated from the body by a rigid spacer. The mother pumped air out when the contraction began. Several disadvantages were inherent in the original design. Pressure was often felt on the chest, where the suit was sealed, and this often impeded breathing and caused great discomfort, while the immobilization of the legs was a drawback when the patient was enclosed for any length of time. No rectal or pelvic examination was possible without the removal of the suit and liquor amnii was apt to gather in it.

In 1960 in Edinburgh a modification of the suit was tried by D. B. Scott and J. D. O. Loudon,² who substituted thin "Polythene" for the strong polyvinyl chloride; the bag they made cost about two shillings and could be discarded after one use. It could be easily cut from 72 inch circumference "Polythene" tubing, with a small number of seams sealed by a small electric "Polythene" welder and reinforced with "Sellotape". It had short legs, which were sealed to the upper parts of the thighs with bandages and provided a perineal access port which allowed rectal examinations to be made. The rigid supporting cage inside the suit, which maintained the air space between the abdomen and the suit, was made to rest on the bed in such a way that the apparatus could be worn by the patient in the sitting or supine position. The sitting position was found by many patients to diminish or even banish the distressing backache of labour. In addition the spacer or cage was not in contact with the patient and respiration was not impeded. The suction for the apparatus was supplied by the standard wall steam pipe venturi suction equipment in the labour ward, which ran continuously, and to which the mother could "hook up" by controlling a valve with her thumb.

In Canada a little later in the same year, Louis J. Quinn and his co-workers³ tested a suit similar to that of Heyns, but with short legs. This they found caused such pressure on the upper parts of the thighs, where the seal was, as to give a great deal of discomfort and to be positively dangerous to patients with varicose veins. Accordingly they constructed a dome of thermoplastic material combining rigidity with flexibility, which extended from the base of the breasts down the flanks to the pubis and was sealed to the body by a sponge rubber seal. The weight and pressure were transmitted by supports to a rigid padded backboard, which rested on the bed and supported the patient in a sitting position at 55°. A vacuum-cleaner pump was used, again patient-controlled. The advantages of this apparatus were that pelvic and rectal examinations could be conducted without the removal of the dome, and no pressure was felt on the chest or the thighs, while the mother could move her legs freely. No liquor gathered, and access to the abdomen could be gained through a small window. In addition the perineal floor, which had tended to bulge with the abdominal wall during decompression in the earlier suit, now was subjected to atmospheric pressure, and it was presumed that for this reason a better application of the presenting part to the dilating cervix was obtained.

It seems that there are many possible and desirable modifications of the original idea, but none of those who have contributed to its development seems to doubt the value of the technique in principle. All are agreed that the pain of labour is decreased, although the reason for this is not fully understood, and that the duration of the first stage is shorter. Quinn *et alii* actually state that the

¹ J. Obstet. Gynaec. Brit. Emp., 1959, 66: 220 (April).

² Lancet, 1960, 1: 1181 (May 28).

³ Canad. med. Ass. J., 1960, 83: 1192.

contractions are more frequent, longer and stronger, and all workers state emphatically that no deleterious effect has been observed in either mother or baby.

SHORTER ABSTRACTS.

ORTHOPAEDIC SURGERY.

TENNIS ELBOW. R. S. Garden, *J. Bone Jt. Surg.*, 1961, 43-B: 100-106 (February).

THE author restricts the term "tennis elbow" to patients who are tender over the radio-humeral gap and who have acute discomfort when forceful extension of the wrist is resisted. This confirms the common symptom of pain in the region of the extensor origin when an object is grasped or lifted in the hand. He notes that the condition is misnamed, since it is chiefly an affliction of middle age. The author's first treatment is by injection of hydrocortisone on one or two occasions. He advises injection into the radio-humeral joint as well as into the tender spot. The author operates on the few that fail to respond to this injection, and has devised his own operation which consists of lengthening the tendon of the exterior carpi radialis brevis below the musculo-tendinous junction. He describes the steps by which he arrived at this operation, and gives details of the technique employed. Late results in 50 patients have shown that this operation causes diminution neither of the power of wrist dorsiflexion, nor in the efficiency of the grip. The author states that it may be undertaken with every prospect of relieving the discomfort of tennis elbow without inviting alternative disability.

ISCHIOFEMORAL ARTHRODERIS: AN END-RESULT STUDY OF FORTY-FIVE CASES. D. G. Vesely, *J. Bone Jt. Surg.*, 1961, 43-A: 363-378 (April).

THE author reviews 44 patients who had their hips fused by the ischiofemoral technique described by Brittain. Twelve surgeons performed the operation, nine of whom were surgical residents in training. The indications were for many conditions of the hip. Tuberculosis was not the only indication. The disease was unilateral, and the average age of the patients was 29.2 years. The technique is carefully described and its development is discussed. It is noted that osteotomy greatly improved the incidence of solid hip fusion after any operation or even after no operation for hip fusion. Stress is laid on the importance of properly imbedding the cortical graft in the body of the ischium. Immobilization was prolonged, and the patient was not allowed up too early. In old people the knee was freed after six weeks. The author states that it is important to protect the tibial donor site for a prolonged period.

ROLE OF THE TRUNK IN STABILITY OF THE SPINE. J. M. Morris *et alii*, *J. Bone Jt. Surg.*, 1961, 43-A: 428-430 (April).

THE authors have made a mathematical and experimental study of the stability of the spinal column under conditions of static and dynamic lifting. They show, first, that the free spinal column will collapse under a load of approximately 4.5 lb. This is the critical load of the unsupported spine, and it will buckle if this is increased. They show the importance of the thoracic and abdominal cavities and particularly the abdominal cavity in the complete support of the spinal column. This has been estimated by measuring intracavity pressures and by electromyographic studies of the various supporting muscles. The authors note that an abdominal corset helps maintenance of high intraabdominal pressure with little muscle contraction. These findings show that, for the lifting of a given weight, support of the spine by the abdominal muscles and compressed contents reduces the pressure on the lower lumbar discs below the level usually estimated.

DELAYED BONE TRANSPLANTATION. AN EXPERIMENTAL STUDY OF EARLY HOST-TRANSPLANT RELATIONSHIPS. R. S. Siffert and E. S. Barash, *J. Bone Jt. Surg.*, 1961, 43-A: 407-418 (April).

THE authors discuss experiments in which they transplanted fresh bone and bone and callus to defects in dogs and rabbits. They found that cancellous grafts became necrotic when they were transplanted into fresh or four-day-old beds, but they consider that the graft showed evidence of osteoblastic change in seven-day-old to ten-

day-old beds. When the bed was older, the graft became isolated by scar and was not well incorporated. Their findings have been confirmed clinically in a series of forearm fractures treated by bone grafting. Non-union occurred in a significant number of cases in which the grafting was performed soon after the fracture, whereas no failures occurred when grafting was postponed for at least one week after the fracture had been sustained.

COMPLETE DISLOCATION AND SUBLUXATION OF THE ACROMIOCLAVICULAR JOINT. END-RESULTS IN SEVENTY-THREE CASES. M. A. Lozcaro *et alii*, *J. Bone Jt. Surg.*, 1961, 43-A: 379-391.

THE authors state that there is no agreement concerning the management of dislocation or subluxation of the acromioclavicular joint, and discuss the many varieties of operative and conservative management. Surgical attack may be: (i) fixation of the acromioclavicular joint with wires, screws, pins or fascial suture; (ii) arthroplasty by excision of the outer end of the clavicle; (iii) fixation of the clavicle to the coracoid process by a screw; (iv) repair of the coracoclavicular ligaments by fascia. Conservative treatment may be by the use of (i) adhesive dressings, (ii) harness or braces, (iii) suspension casts. The authors consider the results in 43 cases at the Mayo Clinic, and the findings appear clearly in favour of conservative management. They state that the only operation of any value, in fact the only operation that was not harmful, was excision of the outer end of the clavicle. Most of the poor results occurred in cases in which the joint was fixed by wires and screws. Cosmetic replacement was never permanent, and function was often poor. Conservative results were much better. The authors agree that the use of a spica or circular cast that exerts positive relocation pressure on the clavicle is the best method of maintaining reduction.

CELLULAR RESPONSE TO FRACTURE STUDIED WITH TRITIATED THYMIDINE. E. A. Tonna and E. P. Crankite, *J. Bone Jt. Surg.*, 1961, 43-A: 352-362 (April).

THE authors have studied the cellular changes which occur in relation to experimental fractures in mice. Cell change was followed by administering tritiated thymidine, which is radioactive and is taken up by the chromosomes as deoxyribonucleic acid. Osteogenic cells were defined and followed in their metamorphosis. The authors noted that 16 hours after the fracture there was a significant proliferation of the pre-osteoblasts of the periosteum, not only in the region of the fracture, but throughout the whole of the periosteum of the diaphysis of the bone involved. The increase in the areas remote from the fracture began to subside rapidly 32 hours after the fracture. The authors postulate the possibility that some substance capable of stimulating this response, may be released from the circulation by the traumatic rupture of the blood vessels.

GENETICS IN ORTHOPAEDICS. C. O. Carter, *J. Bone Jt. Surg.*, 1961, 43-B: 217-219 (May).

IN an editorial article the author surveys the possible value of various forms of scientific study of diseases produced by genetic disturbances. He draws attention to the successful attack on diseases caused by direct environmental factors, excluding trauma. He mentions rickets, previously environmental, which now is caused usually by dominant primary vitamin D resistance. Another problem is muscle weakness and imbalance, which previously was usually due to poliomyelitis. Methods of investigation used include twin studies, family studies, and cytological studies with direct examination of human chromosomes. The author stresses the importance of unselected series and detailed examination of parents and relatives. Other possible methods include animal-breeding studies; these should be carefully interpreted. The author considers that many of these abnormalities are possibly amenable to treatment.

PEDIATRICS.

INITIAL TUBERCULOUS INFECTION DUE TO DRUG-RESISTANT ORGANISMS. C. Zitrin and E. Lincoln, *J. Pediat.*, February, 1961.

AFTER a survey of pre-treatment cultures in 2500 children with primary tuberculosis from seven paediatric chest clinics

in the United States, the authors found that, since the beginning of chemotherapy for tuberculosis, seven children have been shown to be infected initially with isoniazid-resistant tubercle bacilli and 11 children have been shown to be infected initially with streptomycin-resistant organisms. They state that it is therefore essential, as a public health measure, to separate tuberculous patients who are still potentially infectious, whether or not they are receiving drug therapy, from the uninfected. Cultures should be obtained before therapy is begun and, if positive, tested for drug susceptibility.

THE DURATION OF ACTIVITY IN ACUTE RHEUMATIC FEVER.
A. Feinstein and M. Spagnuolo, *J. Amer. med. Ass.*, April 1, 1961.

IN 265 children and adolescents with rheumatic fever who were followed into and beyond the convalescent period, the average duration of acute inflammatory activity was 109 ± 57 days. The average duration was significantly longer in patients who had valvular involvement (124 days) than in those who did not (89 days). In patients who received a relatively short course of anti-inflammatory treatment and who then had a post-therapeutic clinical rebound which was allowed to subside spontaneously, the total duration of rheumatic activity was almost identical to that found in patients whose entire attack had been untreated. These results were an unexpected finding and suggest that the total duration of rheumatic activity remains essentially the same in most patients—rebound or no rebound, treatment or no treatment—as long as the original course of therapy is not given for a period of time longer than the natural course of original inflammation.

OBTAINING URINE FROM INFANTS. S. Friedrich, *Canad. med. Ass. J.*, October 14, 1960.

THE author proposes a simple method of obtaining urine quickly from infants and small children. The child is placed supine and if necessary its legs and arms are gently held down. A kidney basin is placed between its legs. The doctor then knocks rhythmically (about four knocks per second) with his index and middle fingers firmly against the abdominal wall just above the symphysis. The knocking is continued until the child passes urine, which usually happens after 30 to 90 seconds. In children over the age of one year the ulnar side of the hand can be used to knock on the abdominal wall.

THE EARLY SYMPTOMS OF PHENYLKETONURIA. M. W. Partington, *Pediatrics*, March, 1961.

THE history of patients with phenylketonuria indicates that mental development may be normal for some weeks or months after birth and that then the child becomes retarded. Mental deficiency is usually the first symptom of the disease to be recognized. This is seldom found before the age of six months to one year. A diagnosis can easily be made before this age if appropriate tests are carried out on urine or blood. Early diagnosis is of great importance because there is reason to believe that treatment with a diet low in phenylalanine may prevent the appearance of mental defect. The early clinical histories of 36 patients with phenylketonuria were studied. It was found that more than half the patients had suffered from symptoms of one sort or another in the early weeks of life. These symptoms began months before any sign of mental defect was evident to the parents. The main symptoms found were vomiting (17 patients), irritability (12 patients) and infantile eczema (six patients). Some patients had more than one symptom. Three children had pyloric stenosis. It is suggested that in these patients vomiting and irritability in early life may be due to a "toxic" effect of phenylalanine or its derivatives on the brain. It is recommended that all infants having these symptoms, as well as those with infantile eczema, a peculiar smell, seizures, suspected or actual mental retardation, or a retarded (or phenylketonuric) sibling, should be tested for phenylketonuria.

THE CIRCULATION IN THE RESPIRATORY DISTRESS SYNDROME.
A. M. Rudolph *et alii*, *Pediatrics*, 1961, 27: 551-566 (April).

HEMODYNAMIC measurements by means of cardiac catheterization were obtained in 38 infants in the first 30 hours after birth. Nineteen of these infants were considered to have normal circulating and respiratory systems. Nine had mild respiratory distress, and 10 had severe respiratory distress. The circulatory systems of infants with mild

respiratory distress did not appreciably differ from the normal. Some infants in both these groups showed evidence of patency of the ductus arteriosus with a small left-to-right shunt for the first 10 to 15 hours after birth. Studies of infants with severe respiratory distress syndrome (hyaline membrane disease) revealed pulmonary arterial pressure lower than in infants with "normal" circulation, but since these infants were smaller and less mature, the significance of this finding could not be evaluated. All infants with severe respiratory distress syndrome also had evidences of a widely patent ductus arteriosus with a large left-to-right shunt. In the small number of babies studied, this finding did not appear to be associated with birth weight or gestational age. However, no definite differentiation between the association of the widely patent ductus with prematurity or with the respiratory distress syndrome could be made on the basis of the authors' study. The possible role of the widely patent ductus arteriosus as a cause of left ventricular failure, pulmonary edema, the respiratory distress and hyaline membrane formation is considered. The alternate hypothesis, that there is a generalized lack of vasoconstriction, possibly related to prematurity, affecting systemic and pulmonary blood vessels as well as the ductus arteriosus, is also presented. The authors state that no far-reaching therapeutic conclusions in regard to hyaline membrane disease can be revealed on the basis of the limited information presented. Nevertheless they think that serious consideration should be given to attacking the respiratory distress syndrome from the circulatory viewpoint. The use of digitalis has been repeatedly suggested, and good results have been claimed.

EMOTIONAL PROBLEMS OF BURNED CHILDREN. R. Long and O. Cope, *New Engl. J. Med.*, 1961, 264: 1121-1127 (June 1).

THE severely burned patient is a notoriously difficult problem for the doctor and nurse. The medical care is arduous because of the unrelenting, meticulous physical work involved but also in larger part because of the antagonistic behavioural patterns frequently assumed by the patient. The concept underlying the authors' study of 19 burned children was that their peculiar, distinctive behaviour might be due to any one of three circumstances: the trauma and its immediate emotional threat; the hormonal and metabolic response; or the infection, including fever and toxæmia. As these three aspects of the burn, including measurement of the metabolic balance and excretion of adrenocortical hormones, were correlated with the pattern of behaviour, it soon became obvious that the threat of the trauma and of the enforced hospitalization, with protracted painful surgical manoeuvres, far outweighed the other two. Severe reactions were encountered in children with small burns, minimal metabolic load and no fever. A fourth aspect, the significance of which had not been fully anticipated, emerged promptly—namely, that difficult behaviour antedated the burn in many children and that the reasons behind this behaviour remained to plague the hospital period and convalescence. Thus, from the point of view of management of these children, there were two psychologic issues of outstanding importance, the one leading to the burn in the first place and that due to the burn and the continuing threat of enforced hospitalization.

TOXOPLASMOSIS IN CHILDREN. G. Hedenström *et alii*, *Acta paediat.* (Uppsala), 1961, 50: 304-312 (May).

A REPORT is given of 83 cases of toxoplasmosis in childhood. Sixty-two patients were considered to have the congenital disease and 17 the acquired. In four patients it was impossible to determine if the disease was congenital or acquired. As the isolation of the toxoplasma organism is difficult it is often necessary to base a diagnosis on the results of clinical and serological investigations alone. The clinical picture is not pathognomonic as, for example, "inclusion body disease" may present the same clinical pattern as congenital toxoplasmosis, and mononucleosis sometimes cannot clinically be differentiated from toxoplasmic lymphadenopathy. The authors found that in congenital toxoplasmosis the disease in neonates usually ran a severe and often fatal course. In children who developed symptoms later, the most common was chorio-retinitis, but this was not present in all cases. The series of congenital cases comprises some with no symptoms or very few, and normal development. Acquired toxoplasmosis in childhood seems to give the same clinical symptoms as in adults. The most common symptom is lymphadenopathy, with or without fever. One patient had acute chorio-retinitis. The disease often runs a mild course, and subclinical infections are probably not uncommon in childhood.

British Medical Association.

SOUTH AUSTRALIAN BRANCH: ANNUAL MEETING.

THE annual meeting of the South Australian Branch of the British Medical Association was held on June 28, 1961, in the Memorial Hall, 80 Brougham Place, Adelaide, Dr. R. G. C. de Crespigny, the President, in the chair.

ANNUAL REPORT OF THE COUNCIL.

On the motion of Dr. M. E. Chinner, seconded by Dr. A. Britten Jones, the annual report of the Council was received and adopted. The report is as follows.

The Council presents the following report of its activities during the past year.

At the annual general meeting of the Branch, held on June 29, 1960, the following officers and members were elected for the ensuing year:

President: Dr. R. G. C. de Crespigny.

Vice-President: Dr. R. McM. Glynn.

Honorary Treasurer: Dr. J. M. Dwyer.

Honorary Medical Secretary: Dr. Robert Britten Jones.

Ordinary Members of Council: Group A, Dr. G. A. Hodgson, Dr. H. W. Linn and Dr. R. S. Wilkinson; Group B, Dr. H. B. Holmes (Mt. Gambier).

At the first Council meeting of the new year, held on July 7, 1960, Dr. W. J. Sleeman, of Renmark, was again invited to fill the vacancy caused by a failure to elect (*vide* Rule 43 (2)) until the date of the next annual meeting, thus completing an ordinary two-year term of office.

The following subcommittees were also appointed:

Scientific: Dr. I. S. Magarey and Dr. H. W. Linn.

National Health Service: Dr. L. R. Mallen, Dr. C. O. F. Rieger, Dr. G. A. Hodgson and Dr. E. P. Cherry.

Ethics: Dr. C. O. F. Rieger, Dr. J. M. Dwyer, Dr. G. T. Gibson, Dr. R. S. Wilkinson, Dr. R. M. Glynn and Dr. H. R. Oaten.

Parliamentary Bills: Dr. L. R. Mallen, and Dr. C. O. F. Rieger.

Library: Dr. G. T. Gibson, Dr. Robert Britten Jones, Dr. R. M. Glynn and the Honorary Treasurer (*ex officio*).

Salaries: Dr. L. R. Mallen, Dr. C. O. F. Rieger and Dr. H. R. Oaten.

Medico-Pharmaceutical Liaison Committee: Dr. Robert Britten Jones, Dr. C. O. F. Rieger and Dr. G. A. Hodgson.

Tuberculosis Standing Committee: Dr. R. C. Angove, Dr. J. L. Hayward, Dr. K. S. Hetzel, Dr. H. D. Sutherland, Dr. J. G. Sleeman and the Director of Tuberculosis.

Standing Committee on Public Health: Dr. I. B. Jose, Dr. C. C. Jungfer, Dr. J. E. McCartney, Dr. G. Viner Smith, Dr. J. L. Stokes, together with a representative from the Department of Public Health, with power to co-opt.

Standing Committee on Hospitals: Dr. I. B. Jose, Dr. R. H. Elix, Dr. R. G. C. de Crespigny, Dr. J. R. Magarey, Dr. L. R. Mallen and the Vice-President, with power to co-opt.

The President, Immediate Past-President, Vice-President, Honorary Treasurer and Honorary Medical Secretary are *ex-officio* members of all Committees other than the Ethics and Standing Committees.

The President and Honorary Medical Secretary are *ex-officio* members of the Ethics and of all Standing Committees.

Dr. C. G. Wilson attended eight meetings in his capacity as local representative of the Editor of THE MEDICAL JOURNAL OF AUSTRALIA.

In addition, three meetings of the Special Subcommittee (comprising representatives from the honorary staffs of teaching hospitals) regarding the question of the present form of administration of teaching hospitals in South Australia were held during the year.

Monthly Scientific Meetings.

The following scientific meetings have been held during the year:

1960.—July 28, "Cyanosis in the New-born", Professor G. M. Maxwell, discussion opened by Dr. Peter Hetzel. August 25, "Difficult Babies", Dr. Felix Arden, of Brisbane. September 29, "Modern Trends in the Management of Abortion", Professor Howard Carey, of New Zealand, discussion opened by Dr. L. J. Rice. October 27, clinical meeting, Repatriation General Hospital. November 24, symposium on "Asthma", conducted by members of the Australian Laennec Society (S.A.) Branch; speakers, Dr. R. Munro Ford, Dr. J. L. Hayward, Dr. J. H. Brown and Dr. C. T. Piper.

1961.—February 23, clinical meeting, Adelaide Children's Hospital. March 23, clinico-pathological meeting, arranged by Professor J. S. Robertson, discussion opened by Dr. Robert Hecker and Dr. A. Kerr Grant, summing up by Dr. Robert West. April 27, Listerian Oration delivered by Dr. Clive H. Fitts, of Melbourne, the subject being "A Study in Histories", with the sub-title "A Commentary on Pain in the Chest". May 25: three short papers on surgical subjects: "The Treatment of Varicose Veins", Mr. Mark Sheppard; "Carcinoma of the Prostate", Mr. John Corbin; "Post-Operative Ileus", Mr. C. Graham Wilson.

Additional Lectures.

1960.—August 29, by courtesy of the Anti-Cancer Campaign Committee. August 31, by courtesy of the Anti-Cancer Campaign Committee. September 27, by courtesy of the Australian Laennec Society (S.A. Branch).

1961.—February 7, by courtesy of the Australasian Association of Psychiatrists. March 17, by courtesy of the Royal College of Obstetricians and Gynaecologists. April 19, by courtesy of the Repatriation General Hospital, Springbank, film, "Gastro-Intestinal Problems".

Attendances at Council and Committee Meetings.

	Council	Scientific	Library
CHERRY, E. P.	12		
DE CRESPIGNY, R. G. C.	11	1	
DWYER, J. M.	12	1	1
GIBSON, G. T.	6		
GLYNN, R. M.	12	1	1
HODGSON, G. A.	12		
HOLMES, H. B.	9		
JONES, R. BRITTEN	11	1	1
LINN, H. W.	12	1	
MAGAREY, I. S.	11	1	
MALLEN, L. R.	9		
OATEN, H. R.	10		
RIEGER, C. O. F.	12		
SLEEMAN, W. J.	8		
WILKINSON, R. S.	10		
Meetings up to June 1, 1961	12	1	1

¹ Leave of absence from April 13, 1961.

Membership.

The membership of the Branch as at December 31, 1960, was 1035. The number of student associate members was 43.

The deaths of the following members are recorded with regret: Dr. D. E. Drever, Dr. Peter Halley and Dr. G. J. Gregerson.

Appointments and Nominations.

Advisory Council on Health and Medical Services: Dr. L. R. Mallen.

B.M.A. Services Limited: Dr. R. G. C. de Crespigny, Dr. R. M. Glynn, Dr. B. S. Hanson, Dr. L. R. Mallen and Dr. C. O. F. Rieger (chairman).

British Medical Association, Annual Representative Meeting, Sheffield, 1961: Dr. G. Viner Smith, Dr. E. J. Tambllyn and Dr. J. R. Thompson.

Central Council of the Association, London: Dr. Myles Formby.

Chiropody Board of South Australia: Dr. Neville Wilson.

Dental Board of South Australia: Dr. Graham Bennett.

Federal Council of the British Medical Association in Australia: Dr. L. R. Mallen and Dr. C. O. F. Rieger.

Royal Flying Doctor Service in Australia (S.A. State Section): Dr. J. M. Dwyer.

Florence Nightingale Memorial Committee of Australia (S.A. Branch): Dr. Dorothy Adams and Dr. Mary Walker.

Medical Board of South Australia: Dr. C. O. F. Rieger.
Mothers and Babies' Health Association: Dr. Neville Bickford.

Nurses' Board of South Australia: Dr. Thorold Grant.

Old People's Welfare Council of South Australia: Dr. C. Duguid and Dr. P. F. Stratmann.

Rehabilitation Standing Committee (Departmental): Dr. J. R. Barbour.

S.A. Association for Mental Health Inc. (Council): Dr. S. B. Forgan.

The Medical Journal of Australia (Editor's Representative for South Australia): Dr. C. G. Wilson.

The St. John Ambulance Brigade (S.A. District): Dr. H. H. Hurst (Commissioner).

University Post-Graduate Committee in Medicine: Dr. I. S. Magarey, Dr. Robert Britten Jones and the President *ex officio*.

World Medical Association: Dr. L. R. Mallen (Past Chairman of Council).

Sections Formed for Special Knowledge.

Australian Society of Anaesthetists (South Australian Branch).

The South Australian Branch of the above Society has now increased its membership to 52 members in the past year. At the annual general meeting in February the following office bearers were reelected for a further term: Chairman, Dr. M. C. Newland; Chairman-Elect, Dr. H. J. Ellis; Committee Member, Dr. J. A. Ferris; Honorary Treasurer, Dr. M. W. Sando; Honorary Secretary, Dr. D. P. Dineen.

Six meetings were held during the year at Newland House, with an average attendance of 27 members. The outstanding achievement of the year was the reconstitution of the Anaesthetic Deaths Investigation Committee, comprising delegates from this Society, the Faculty of Anaesthetists of the Royal Australasian College of Surgeons and other invited members. Six papers were delivered at these meetings of the Society, four of which were given by members. Dr. S. Marshall discussed the methods of sterilization of anaesthetic equipment used in his department. An excellent paper on "Fluothane" was given by Dr. G. David, and Dr. R. J. Sweeney prepared an historical treatise on the life of Dr. Hewitt and his contribution to anaesthesia. A report on the Toronto Conference and his subsequent tour was given by Dr. W. D. Ackland Horman.

We were honoured by two overseas visitors this year: Dr. F. Földes, from America, in April, 1960, and Dr. Derek Wylie, of St. Thomas's, London, in February, 1961. Both men proved to be stimulating, and their visits were indeed appreciated socially as well as professionally.

Section of Clinical Medicine—Annual Report, 1960-1961.

Membership: The current number of financial members of the Section is twenty-nine.

Officers: At the annual general meeting, held on June 21, 1960, the following officers were elected: Chairman, Dr. R. A. A. Fellow; Honorary Secretary and Treasurer, Dr. S. C. Milazzo; Committee, Dr. S. Posen, Dr. R. McEwin and Dr. J. G. Wilson.

Meetings: Clinical meetings were held at the Chest Clinic in June, September and November, 1960, and in March, 1961, the average attendance being 34 members.

The Committee favoured arranging meetings as clinical symposia, and these dealt with syphilis, pericardial effusion, alcoholism and hypertension. Three or four cases were presented and discussed at each meeting, and, as in previous years, an effort was made to draw cases from a variety of sources rather than from major hospitals only.

With the transfer of the Chest Clinic to Ruthven Mansions, Pulteney Street, in May, 1961, it is probable that the old Chest Clinic building will not remain available to the Section, and a number of alternatives have been suggested, but no final decision made. A suggestion that meetings be held in rotation at the Royal Adelaide, Queen Elizabeth, Adelaide Children's and Repatriation General Hospitals was not greatly favoured by members of the Section.

The B.M.A. (Section of Clinical Medicine) Prize was won by Mr. Robert Geoffrey Strickland.

South Australian State Section of the Ophthalmological Society of Australia.

Six meetings have been held during the year with an average attendance of ten members. Elected officers were: Chairman, Dr. D. O. Crompton; Vice-Chairman, Dr. T. L. McLarty; Honorary Secretary and Treasurer, Dr. M. C. Moore; Committeeman, Dr. A. L. Tostevin.

The July meeting was a clinical meeting, at which a large number of cases were presented, and there were some other presentations at all other meetings. In addition, the following addresses and papers were given:

1960.—September, "Experiences in the National Health Service in Great Britain", Dr. Robert Renton and Dr. Remington Pyne. November, films from Barriquer's Clinic were shown by Dr. J. H. Slade and Dr. D. O. Crompton. December, Dr. J. H. Slade and Dr. D. O. Crompton described their experiences at the recent Asian tour and Conference of the Asia-Pacific Academy of Ophthalmology in Manila.

1961.—February, "Ocular Sepsis", Dr. D. O. Crompton. May, "Some Aspects of Corticosteroid Therapy", Dr. Basil Hetzel.

The Oto-Laryngological Society of Australia (South Australian State Section).

The annual general meeting of the Oto-Laryngological Society of Australia, South Australian State Section, was held on March 29, 1960. The following officers were elected: Chairman, Dr. R. H. von der Borch; Vice-Chairman, Dr. P. G. Jay; Committeeman, Dr. R. G. Plummer; State Representative; Dr. R. M. Glynn; Honorary Secretary and Treasurer, Dr. R. E. Gristwood.

Ordinary meetings were held on June 28, July 19 and October 18, 1960. At the July meeting Dr. Peter Verco gave a talk on certain aspects of the radiology of ear, nose and throat disorders, illustrated by radiographs and slides. The October meeting was a clinical one, at which a number of patients with a variety of ear conditions were presented for discussion.

An extraordinary general meeting was held on December 6, 1960, to consider certain recommendations regarding alterations to the constitution of the Oto-Laryngological Society of Australia.

Dr. M. W. Brown and Dr. K. T. Jones were admitted to membership of the Society in 1960.

From April 23 to May 6, 1960, Dr. M. Lederman visited Adelaide as the first visiting Cancer Professor appointed by the Anti-Cancer Committee, and he gave lectures of special interest to members of the Society, namely, "Cancer of the Larynx", in addition to which out-patient clinics and discussions were held in the Radiotherapy Department of the Royal Adelaide Hospital.

In September, Dr. John Shea, jun., of Memphis Tennessee, U.S.A., visited Adelaide and gave a memorable demonstration of his technique of fenestration of the oval window with a vein graft and "Polythene" strut to replace the stapes in two cases of otosclerotic deafness, and this was followed by a film in the evening.

Affiliated Local Associations of Members.

Barossa Valley Medical Association.

On April 30, 1961, a meeting of 11 medical practitioners from the Barossa Valley and neighbouring districts was held at Nuriootpa. Apologies were received from three who were unable to attend.

A new local association called the Barossa Valley Medical Association was formed at this meeting, the following being elected to the committee: President, Dr. F. W. Hoopmann; Vice-President, Dr. D. R. R. Anderson; Honorary Secretary-Treasurer, Dr. K. G. Watson; Committee Members, Dr. D. C. Bowering and Dr. J. L. Rutter. The State President, Dr. Geoffrey de Crespigny, was invited and attended as a guest and adviser. It is hoped to hold the first clinical meeting in June.

Northern Medical Association.

During the year four meetings were held as follows:

1960.—April 4, Gladstone; speakers were Dr. M. C. Moore, on "Common Causes of Blindness and Diminished Vision", Dr. Ivan Camens spoke on "Steroid Therapy". Five members were present. November 6, Blyth; speakers were Dr. V. Y. Bockner, who gave an address entitled "Survey of Hormones

in Gynaecology", and Dr. M. J. W. Sando, who spoke on "Anaesthetic Problems in Children". Nine members were present.

1961.—February 5, Clare; speakers were Dr. P. G. Jay, on "Diagnosis and Management of Deafness in Children", Mr. H. D. Sutherland, on "Empyema", Dr. S. C. Milazzo on "Differential Diagnosis of Polyarthritides", and Mr. R. G. White on "Common Bone Conditions". This meeting was attended by the President of the Branch, Dr. R. G. C. de Crespigny, and the Vice-Chairman of the Post-Graduate Committee in Medicine, Mr. I. B. Jose, and 10 members of the Association. May 7, Port Pirie; speakers were Dr. D. O. Crompton, on "Common Eye Injuries and their Management", and Dr. J. S. Skipper, on "Breech Management".

Office bearers for the year were: President, Dr. V. W. Potter; Vice-President, Dr. R. T. Davidson; Honorary Secretary and Treasurer, Dr. L. J. Daly.

Lower Murray Medical Association.

(Inaugurated July 9, 1960.)

Committee: President, Dr. F. F. Heddle; Honorary Secretary, Dr. W. S. Lawson; Dr. P. C. Gooden, Dr. B. E. Bookman and Dr. J. D. Reid. Dr. A. G. Rowe resigned as Honorary Secretary in March, 1961.

Members: Dr. R. Schaefer, Dr. E. M. Nicholls, Dr. R. V. Pridmore, Dr. J. G. McDonald, Dr. R. E. Whittington, Dr. J. R. Richards, Dr. V. G. Springett, Dr. A. D. Hensley, Dr. J. G. Linn, Dr. L. L. C. Evans, Dr. J. R. Coulter and Dr. W. H. Collins.

Meetings: Four meetings were held, three being in the form of dinners at which the following guest speakers addressed members: Professor G. M. Maxwell, "Congenital Heart Disease"; Professor R. P. Jepson, "Recent Developments in Vascular Surgery"; Professor H. N. Robson, "Investigation of Blood Diseases".

One meeting was also attended by the President of the South Australian Branch of the British Medical Association, Dr. R. G. C. de Crespigny.

There are eighteen members of the Association.

Salisbury and Elizabeth Medical Association.

The annual meeting of the Association was held on October 13, 1960, when the following officers were elected: President, Dr. J. R. Coates; Secretary-Treasurer, Dr. A. C. Nield; Committee, Dr. V. A. Hart and Dr. D. P. Reid.

Numerical strength for 1960-1961 was 12, comprising five general practitioners from Salisbury and seven from Elizabeth. Numerical strength for 1961-1962 will be increased by two, in the persons of Dr. Holbrook and Dr. Chaffer, two lady doctors residing in Elizabeth. Neither of these is engaged so far in full-time general practice.

Meetings and important business have been as follows:

1960.—February 22, meeting was addressed by Dr. G. T. Gibson, President of the South Australian Branch of the British Medical Association. The Commonwealth Government Pharmaceutical Benefits scheme was discussed, with the conclusion that the majority thought the new formulary a restriction to prescribing. July 22, scientific and business meetings. September 23, scientific and business meetings. October 13, annual general meeting, with election of officers as above. November 17, Dr. R. G. C. de Crespigny, President of the South Australian Branch of the British Medical Association, attended this meeting. Two clinical cases were presented and Dr. de Crespigny commented.

A Caesarean set was purchased for £75, and it was therefore agreed that future doctors using instruments belonging to the local association should pay the sum of £30 instead of £20 into the funds of the Association.

This meeting also resolved to inform the Lyell McEwin Hospital Board "that this Association believes the charge for X-rays by the hospital is excessive".

1960.—December 15: A special meeting was held on this date, to which were invited certain specialists having an interest in the district, local physiotherapists and dentists, and the Air Force doctor from Edinburgh.

South Eastern Medical Association.

Five meetings were held during the year.

On July 16, 1960, a clinical meeting was held at Mt. Gambier, when Dr. W. E. King spoke on "Recent Advances in Gastroenterology".

On October 15, 1960, a clinical meeting was held at Penola, at which Professor L. W. Cox gave an address on "The Management of Breech Presentation".

On November 4, 1960, at a clinical meeting at Mt. Gambier, Professor Wilson, of Sheffield, presented a talk on "Hypothyroidism".

On February 18, 1961, a clinical meeting was held at Mt. Gambier, at which Professor Maxwell spoke on "Recent Advances in Congenital Heart Disease", and also on "Cyanosis in the Newborn". The State President of the British Medical Association, Dr. R. G. C. de Crespigny, was also present.

On April 22, 1961, the annual general meeting was held at Naracoorte. Dr. Mary Burnell and Professor Gray, of Liverpool, conducted a quiz session, which was followed by an address by Professor Gray on "How I Would Administer an Anaesthetic for an Appendicectomy".

The following officers were elected for the ensuing year: President, Dr. J. E. Dunn; Vice-President, Dr. H. B. Holmes; Secretary-Treasurer, Dr. R. H. Jarvis; Committee, Dr. H. B. Holmes, Dr. D. A. Jacobs and Dr. K. J. Wilson.

Upper Murray Medical Association.

Five post-graduate week-ends have been held throughout the year, as follows:

1960.—May, Renmark: visiting lecturers were Dr. E. B. Sims, Dr. L. J. T. Fellow and Dr. C. B. Sangster, who spoke on "Rheumatism". August, Berri: Dr. George Gibson spoke on "Pelvic Pain" and Dr. Mark Bonnin on "Hypertension and Coronary Insufficiency". October, Waikerie: a special lecture by Professor Wilson, of Sheffield University, on "Recognition of Early Myxoedema"; he was assisted by Mr. Catchpole in elaborating on "Thyrotoxicosis and Cirrhosis of the Liver". November, Loxton: Dr. Barton Venner spoke on "Diagnosis and Treatment of Varicose Veins", and Dr. D'Arcy Sutherland on "Vague Lung Shadows and Carcinoma of the Lung".

An ordinary meeting was held at Loxton on March 15, 1961, for a case discussion group. Office-bearers are: President, Dr. K. G. Evans; Vice-President, Dr. C. G. Hoare; Honorary Secretary, Dr. T. G. Kohler. The average attendance at meetings was eight out of a total of 12 members.

Yorke Peninsula Medical Association.

The following post-graduate lectures have been held during the year:

1960.—May 29, Dr. H. Lander, "Poisons"; Mr. R. G. White, "Common Fractures". August 28, Mr. B. N. Catchpole, "Scope of Arterial Surgery"; Dr. H. R. Gilmore, "Clinical Applications of the Knowledge of Serum Electrolytes". November 27, Dr. B. S. Hetzel, "Diagnosis of Thyroid Disease and Recent Advances in Endocrine Disorders"; Mr. Mervyn Smith, "Management of Acute Cholecystitis and Biliary Tract Disorders".

1961.—March 19, Professor Bradley Patten, "Embryonic Circulation and Development of the Heart"; Dr. M. D. Begley, "Some Special Techniques in Radiology".

Officers of the Association are as follows: President, Dr. W. I. Seith (Kadina); Honorary Secretary-Treasurer, Dr. J. S. Flett (Kadina).

Workers' Compensation Act.

A new schedule of fees for consultations and visits under the *Workers' Compensation Act* was implemented by arrangement with the Fire and Accident Underwriters' Association from March 1, 1961. This is as follows:

	At Home or Hospital	At Surgery
	s. d.	s. d.
(a) First visit except under		
(c) below	22 6	17 6
Second visit	20 0	15 0
Third and subsequent ..	20 0	15 0
(b) Maximum weekly payments:		
First week	100 0	77 6
Second week	80 0	60 0
Third and successive weeks	60 0	45 0

In addition, the "after hours" fee was increased to £1 7s. 6d.

It is stressed that these fees apply only to member-companies of the Fire and Accident Underwriters' Association, and that in other cases the medical practitioners should send an account computed on an ordinary private fee basis direct to the patient.

Fees for Vaccination of Industrial Groups against Influenza.

With a view to achieving some degree of uniformity in the fees being charged by members who are asked to assist industry by vaccinating employees against influenza, at its March meeting the Council decided that the rate of payment should be computed on a fee-for-service rather than a sessional basis.

Under ordinary circumstances it is considered that a fee of 2s 6d. for each injection would be a reasonable fee, with appropriate increases on this amount in accordance with the number of persons to be immunized, and the provision or otherwise of vaccine, material and nursing assistance.

It was also recommended that employees be advised by the industrial organization by whom they are employed, that they are quite at liberty to arrange for these injections to be performed by their usual medical attendant if they desire to do so.

Administration of Teaching Hospitals in South Australia.

Three meetings of the Special Subcommittee (comprising representatives from the honorary medical staffs of the teaching hospitals and the Dean of the Faculty of Medicine) were held during the year. On July 21 a deputation comprising representatives from this Committee interviewed the Minister of Health, but it is to be regretted that the interview and later report were quite unsatisfactory. A reply, which later came forward from the Minister in October, 1960, did not convey any indication that any change in the existing administrative structure was envisaged.

Realizing that it would be necessary to take the problem to a higher authority, a further communication was forwarded to the Minister asking him to arrange an interview with the Honourable the Premier to discuss the matter with which the medical profession in South Australia was so concerned. In reply, the Minister said that he would do this, provided detailed proposals of the matters which it was desired to have considered were first submitted to the Government prior to the deputation.

Under date March 29, 1961, a further letter was sent to the Minister setting out in detail the reasons for urging a change in the present form of administration peculiar to our large teaching hospitals, and outlining a plan (similar to that at present in existence in respect of the Institute of Medical and Veterinary Science) which the subcommittee considered would strengthen their administrative structure.

It was requested that steps be taken to arrange an interview with the Honourable the Premier, and himself, and members of the special subcommittee of the Association, in order that the views of the medical profession could be placed before the Government.

Further advice as to the date of this meeting is now awaited.

Pharmaceutical Benefits.

The amended Pharmaceutical Benefits Scheme (which came into force as from March 1, 1960) has been considered by the Branch Council on many occasions throughout the past year. This was also the subject of an extraordinary general meeting of members held on July 26, 1960. Following a lead given by the Federal Council, which set up a special committee to examine alternative Pharmaceutical Benefit Schemes and possible modifications of the present arrangement so as to make this more acceptable to members of the medical profession, the State Council established a local committee for the purpose of making appropriate recommendations to the Federal Council in this regard. Members were asked to forward their suggestions for consideration by this Committee.

In the absence of any response to this invitation, it was assumed that members were prepared to carry on with the existing scheme in the hope that some of the more objectionable features would be removed after further negotiation between the Federal Council and the Government.

As a result of the deliberations of the Federal Committee, it has been recommended to the Minister for Health that the list of restricted Pharmaceutical Benefits be abolished, and that if the Government should be unwilling to abolish the restricted list, it should be urged that the list be reviewed with the aim of drastically reducing the number of restricted drugs. In addition, the special committee has also been asked to prepare a list of the drugs which it is considered should be removed from the restricted list.

Meanwhile, at the request of the Federal Council, the Government has announced its intention of ceasing to print further supplies of Government prescription forms when present stocks are exhausted towards the end of the year, and members currently using these have been informed of this so that they will have ample time in which to make other arrangements.

Service Pensioners.

In his budget speech on August 16, 1960, the Federal Treasurer announced that it was the intention of the Government to provide free medical treatment for disabilities not due to war service for service pensioners, and that the plan would be implemented as soon as administrative arrangements could be made. This step was taken without prior reference to the medical profession, and the scheme came into operation on September 29, 1960.

This matter was taken up with the Repatriation Department by the Federal Council, and further negotiations are pending.

Organization of the Medical Profession in Australia.

All sections of the medical profession in Australia were represented at a Convention held in Sydney on November 26 and 27, 1960, when consideration was given to a draft constitution for an Australian Medical Association, as drawn up by a Steering Committee of the Federal Council.

A number of amendments were made to this, which was then referred back to the Steering Committee so that these could be incorporated in a further draft in association with the legal adviser to the Federal Council. Arising from a meeting of the Federal Council held in Sydney on March 17, 1961, a further draft (Draft 2) was produced, which was then circulated to the Branches for their comments. It was requested that the matter be treated as one of urgency, and that comments be forwarded not later than May 15, 1961, prior to a special meeting of the Federal Council being held early in June.

Realizing the need for legal opinion to assist it in interpreting many of the points contained in Draft 2 of the proposed Memorandum and Articles of Association, at a special meeting of the Branch Council, held on April 20, 1961, the solicitor to the Branch (Mr. J. F. Astley, Q.C.) was invited to be present to advise members accordingly. At this meeting careful consideration was given to both drafts, and several amendments and alterations were later recommended. At the same time, it was also decided to hold an extraordinary general meeting of all members of the Branch early in May for the purpose of further considering the proposed Memorandum and Articles. Members were informed that to enable a "caretaker" Federal Council to function until the holding of the first Federal Assembly meeting, it was necessary to name an interim Federal Council and officers of the new Association, and further, that it was accordingly recommended that the present Federal Council and its office bearers be named as the interim Federal Council and officers of the Australian Medical Association until such time as the new Council and office bearers can be elected in accordance with the proposed constitution. A printed copy of the proposed Memorandum and Articles of Association was circulated to members with the notice calling the meeting.

The extraordinary meeting of members was held on May 12, 1961, when the proposed Memorandum and Articles were, with several minor amendments, approved and adopted by the members of this Branch, and the Federal Council was advised accordingly. It will undoubtedly take a long time to evolve a constitution, the terms of which would be acceptable to all sections of the medical profession in Australia. Whilst the Council believes that the constitution is not perfect, it feels that there is nothing to be gained by making a major issue of certain unsatisfactory features at this stage, and it is essential for it to be submitted to the Federal Attorney-General in Canberra as soon as possible.

Approval by all State Branches of the Association of Draft 2 will permit the Federal Council to complete the necessary legal formalities in connexion with the new Association in accordance with the requirements of the Companies Act, thus paving the way for the inauguration of the Australian Medical Association as from January 1, 1962. The attention of members is directed to the leading article in THE MEDICAL JOURNAL OF AUSTRALIA of April 15, 1961, which gives a very concise account of the various steps which have been taken in this matter.

Income and Expenditure Account for Year Ended December 31, 1960.

1959	To	1960		1959	By	1960	
		£	s. d.			£	s. d.
—	Advertising	2	5 0	—	Gross Subscriptions ..	10,285	2 6
15	Audit Fee	31	10 0	7,586	City	8,046	1 0
212	Depreciation	340	4 2	2,178	Country	2,126	14 3
149	Entertainment	322	9 11	81	Students	112	7 3
1,103	General Office Expenses	1,717	18 10		Less Deductions:		
193	Legal Expenses	101	8 3		British Medical Associa-		
543	Postages	597	16 11	1,477	tion, London	2,760	11 2
2,203	Secretariat	1,828	16 9	466	Medical Journal of		
551	Printing and Stationery	589	7 7		Australia	41	4 1
104	Telephone	198	14 1	982	Library	1,035	0 0
				1,155	Federal Council	1,223	15 0
						5,060	10 3
					Net Subscriptions	5,224	12 3
					Interest	324	14 10
					Deficit for year	181	4 5
		£5,730	11 6			£5,730	11 6

JOURNAL OF AUSTRALIA at an early date. It is essential for interstate visitors to make early application.

British Medical Association: Visit of Officers from Parent Body.

An invitation was extended by the Federal Council to officers and members of the Parent Body to visit Australia in February at the conclusion of the 129th Annual Meeting of the Association, which was held at Auckland, New Zealand, from February 3-10 inclusive.

Dr. Talbot Rogers (Chairman of the Representative Body) and Professor D. E. C. Mekie (Chairman of the Overseas Committee) later came to South Australia during the week-end commencing February 24, 1961, when they were entertained at dinner by the Council and also taken to places of local interest during the course of a short visit to this State.

B.M.A. Services Limited.

According to figures released by the Directors, the trading results of the Company for the year ending December 31, 1960, were significantly better than the previous year. All revenue-producing agencies showed increased earnings as compared with 1959 figures, and, as a result of this, the Building Fund of the Branch has benefited substantially through the activities of the Company during the past year. Apart from the usual medical agency services given to members, it is possible to purchase many different kinds of electrical goods at substantial reductions on the usual retail prices. This also applies to office equipment and a host of other articles for both professional and household use. Both general insurance and life assurance may also be arranged on most advantageous terms on the shortest possible notice.

The future of this Company is entirely dependent upon the support which it receives from members of the medical profession in South Australia, and the profits, after payment of normal operating costs, are transferred to the credit of the B.M.A. Building Fund. The proceeds of this fund are applied solely towards repaying the cost of the Memorial Hall. The desirability of the debt incurred by the Branch being liquidated as speedily as possible requires no emphasis.

Frank S. Hone Memorial Prize.

This prize, which was awarded on the results of the 1960 examinations for the degrees of bachelor of medicine and bachelor of surgery, was won by Richard John Kimber.

Sir Trent Champion de Crespigny Memorial Fund.

During the year, the Council sought the opinion of the original subscribers to the fund with a view to ascertaining whether they were in favour of changing the form of this memorial from a library of old medical books to that of a clinical prize. Over 95% of members whose opinion was given indicated that they were in favour of this proposal. The Council then referred the matter to a small sub-committee in order to explore the possibility of instituting a clinical prize in honour of the late Sir Trent Champion de Crespigny.

A letter was sent to the Faculty of Medicine, suggesting that the prize be awarded to the student gaining the highest marks in the clinical part of the medical section of the final year examination in medicine, and proposing that the

winner be given a voucher to the value of 10 guineas for the purchase of selected medical books and equipment. The University was asked whether it would be prepared to administer the award, and, if so, whether notice of the prize could be included in the University Calendar.

In May advice was received from the Council of the University that the offer to provide an annual prize in the medical course in memory of the late Sir Trent Champion de Crespigny had been accepted, and stating that the conditions of the award will appear in the University Calendar from 1962 onwards.

Honorary Life Membership.

The Council offers its congratulations to Dr. E. Couper Black, who completed 50 years' continuous membership during the year, on becoming an Honorary Life Member of the British Medical Association.

Federal Council of the British Medical Association in Australia.

The Federal Council met in Adelaide in August, 1960, and Sydney in November immediately following the Convention to consider the draft constitution for an Australian Medical Association. A further meeting was held in Sydney in March, 1961, and a special meeting has been called for June 9 in order to complete the legal preliminaries prior to the formation of a Medical Association of Australia.

Reports of these meetings appeared in THE MEDICAL JOURNAL OF AUSTRALIA.

Gold Medal of the British Medical Association in Australia.

The congratulations of the Council were forwarded to Dr. H. C. Colville, of Victoria, and Dr. W. F. Simmons, of New South Wales, who, at the March meeting of the Federal Council, were awarded the Gold Medal of the British Medical Association in Australia for long and distinguished service to the British Medical Association and to members of the medical profession throughout Australia.

Local Associations of Members.

It is pleasing to see that steps have been taken throughout the past year to form two further Local Associations of members, i.e., the Lower Murray Medical Association and the Barossa Valley Medical Association, respectively. The number of affiliated Local Associations of members is now seven.

There is no doubt that these groups fulfil the objects for which they were formed in promoting the scientific and medico-political interests of the members who are in practice within the local boundaries concerned, in addition to which it gives them an opportunity of meeting their colleagues at regular intervals to discuss matters of mutual interest.

Honours and Awards.

The Council offers its congratulations to Sir Francis Matters, on whom Her Majesty the Queen has been pleased to confer the Honour of Knight Bachelor, and to Dr. J. D. Fotheringham, who has been promoted to the grade of Officer in the Venerable Order of St. John of Jerusalem.

R. G. C. DE CRESPIGNY,
President.

FINANCIAL STATEMENT.

The financial statement was presented by the Honorary Treasurer, Dr. J. M. Dwyer, and adopted.

ELECTION OF OFFICE BEARERS.

There being no other nomination, Dr. de Crespigny declared Dr. R. M. Glynn elected to the office of President for the ensuing year, and invested him with the badge of office. Dr. Glynn thanked the members for his election.

Dr. Glynn then announced the following office bearers for the ensuing year:

Vice-President: Dr. H. R. Oaten.

Honorary Treasurer: Dr. J. M. Dwyer.

Honorary Medical Secretary: Dr. R. Britten Jones.

Members of Council: Group A (metropolitan), Dr. R. A. Isenstein, Dr. M. Y. Sheppard, Dr. P. S. Woodruff. Group B (country), Dr. F. W. Hoopman, Nuriootpa.

Messrs. Annells, Tilley, Hunwick and Company were appointed auditors for the ensuing year.

PRESENTATION OF SECTION OF CLINICAL MEDICINE PRIZE.

Dr. M. W. Miller, chairman of the Section of Clinical Medicine, presented the winner of the Section's prize for 1960, Dr. R. G. Strickland, to Dr. Glynn. Dr. Glynn presented him with a certificate of the award.

AMENDMENT OF RULES.

On the motion of Dr. G. A. Hodgson, seconded by Dr. G. L. Bennett, it was resolved that the Rules of the Branch be amended:

- (a) By striking out from Rule 18 the words "The Branch shall be at liberty to" and inserting in their place the words "The Council may from time to time".
- (b) By striking out from Rule 39 the words "The Council shall be comprised of the President, the Immediate Past President, not more than two Vice-Presidents, two representatives of the Federal Council, Honorary Treasurer, Honorary Medical Secretary, and eight ordinary members", and inserting in their place the words "The Council shall be comprised of the President, the Immediate Past President, not more than two Vice-Presidents, any Officers of the Australian Medical Association who are members of the Branch, the representatives of the Branch on the Federal Council, the representatives of the Branch on the Federal Council of the Australian Medical Association, Honorary Treasurer, Honorary Medical Secretary, and eight ordinary members".

RETIRING MEMBERS OF COUNCIL.

A vote of thanks was passed to the retiring members of Council, Dr. E. P. Cherry, Dr. I. S. Magarey, Dr. J. G. Sleeman and Dr. G. T. Gibson.

RETIRING PRESIDENT'S ADDRESS.

Dr. R. G. C. de Crespigny delivered his retiring President's address (see page 537), after which a vote of thanks was passed to him.

Out of the Past.

EMERGENCY PRACTICE IN THE COUNTRY.¹

[From the *Australasian Medical Gazette*, May 20, 1903.]

To the Editor.

Sir,—In your February number Dr. Throsby makes mention of the "awkward and embarrassing circumstances country practitioners frequently find themselves in." The following is such a case:—When visiting (on horseback) a case of fractured tibia (previously put up), about 15 miles from home, and only carrying with me a stethoscope, a miniature pocket case, a hypodermic case and a small phial of pot. permang. crystals, I was called another 12 miles over the mountains. On arrival I found my patient, a multipara, suffering largely from the effects of uterine hemorrhage. I diagnosed "abortion at three months". I

¹ From the original in the Mitchell Library, Sydney.

packed the vagina with strips of torn sheeting, but failed to arrest the hemorrhage. The patient lived in a "hut" (letting wind and rain in), 10 miles from any neighbour, and nothing in the shape of douche or Higginson was to be had. I gave full dose of ergotine hypodermically. I got the husband to find me a hammer, an old file, and a length of fencing wire, and made a curette and sharp hook. I then drew down uterus and curetted out just such a "mole" as Dr. Throsby describes. Then getting a piece of sheeting wrapped round my curette I swabbed out the cavity of the uterus with a solution of Condy's. There was no further hemorrhage and no subsequent rise of temperature. I had no assistant, the only other occupants of the hut being the husband and some small children. As far as I know, neither text-books nor teachers go very fully into the details of procedure in such a case.—I am, etc.,

C. STANSER BOWKER,
M.R.C.S. (Eng.), L.R.C.P. (Lond.).

Dungog, N.S.W.

Correspondence.

REPORT OF AN OUTBREAK OF "HAND-FOOT-AND-MOUTH DISEASE" IN SYDNEY.

SIR: Dr. A. K. McKellar Stewart, of Peakhurst, New South Wales (September 2, page 394), reports several cases of this disease occurring in his district from November, 1960, to January, 1961. He refers also to outbreaks in Toronto (Canada) in the summer of 1957, and in Birmingham (England) in June, July and early August, 1959. It may be of some interest, therefore, to record details of similar cases seen in Manly district in the spring of 1956.

On October 22, 1956, I examined a girl, aged four years and five months, and found a temperature of 101.5° F., oral ulcers and vesicles on palms and soles which had been present apparently for three days. Her brother, aged two years and six months, was found to have similar ulcers and vesicles, but in addition he had red macules on the buttocks, such lesions having been present for only one day. He was afebrile. The mother of these children had developed two oral ulcers three days previously, but no skin lesions.

The next day I was called to a family living about one mile away from and unknown to the previous cases. One girl, aged six years and seven months, had oral ulcers (two days), blisters (one day) on palms, interdigital surfaces of fingers and both dorsal and plantar surfaces of the feet. Her temperature was 99° F. and pulse rate 108 per minute. Her sister, aged one year and six months, was found to have blisters on palms and both surfaces of the feet, and what appeared to be very early oral lesions. Her temperature was 99.5° F.

Because of these unfamiliar clinical features, which bore a close resemblance to descriptions of foot-and-mouth disease, I contacted the State Department of Health. Both families were visited by department medical officers and samples of vesicle fluid obtained, but tests for foot-and-mouth disease virus were negative. The illness was mild in each case, all lesions healing within a few days, and there were no apparent sequelae.

Yours, etc.,

HORACE NORTON.

7 Wiyella Court,
West Esplanade,
Manly, N.S.W.
September 17, 1961.

GENERAL PHARMACEUTICAL BENEFITS.

Sir: My company is the distributor in Australia of androstanolone, and I would like to comment on Dr. W. T. Herdman Porter's letter in THE MEDICAL JOURNAL OF AUSTRALIA of September 2, 1961.

Dr. Herdman Porter is comparing the British wholesale price with the Australian retail price. Accordingly, of the £8 (actually £7 18s. 6d.) Dr. Herdman Porter cannot account for, some £3 8s. 7d. represents the Australian retail pharmacists' N.H.S. margin. A further £2 0s. 3d. represents the Australian wholesalers' N.H.S. margin. The remainder namely, £2 9s. 8d., is represented by freight.

insurance, Customs duty and landing charges, distribution and marketing expenses, and "agents' profit".

While the Australian price structure is higher than the British, it is hardly unreasonably so when one has regard to our higher general standard (and cost) of living.

Yours, etc.,

For MUIR & NEIL PTY. LTD.

479 Kent Street,
Sydney.
September 14, 1961.

J. R. B. NEIL, B.Sc.,
Managing Director.

THE MANAGEMENT OF MALDESCENDED TESTIS.

SIR: The comments of Mr. Wyndham on my recent paper on maldescent of the testis seem to call for some reply. May I begin by stating in the late Eric Susman's phrase, "my withers are unwrung"?

My comment on the testis in the superficial inguinal pouch (commonly called ectopic because it lay over the canal, having "turned the corner" after emerging from the external ring) was simply that they differ in no important way from those commonly called undescended. Hence why confuse the issue? A testis within the canal is never palpable, even when fat and skin have been reflected and only the external oblique aponeurosis remains as at operation. A testis found at operation in the superficial inguinal pouch, with a cord long enough to reach the scrotum easily, would make me feel that I had made a diagnostic error—and that the testis belonged to the retractile group, and had not needed operation.

The statement that after an Ombrédanne operation a high testis is drawn down by the pull of the scrotal septum is not based on optimism but upon frequent clinical observations—confirmed by that of my colleagues in their own cases. In any case, I fail to see the similarity of this to the actions imputed by some to the gubernaculum.

I do not think that experiments on the descent of the testes of monkeys can be used as a real guide to human treatment. One may remember that the male sex hormones have some interesting effects upon the skin colouring of the buttocks of mandrills (and I think the Rhesus group) which are fortunately not seen in their human counterparts, and observations in one species cannot be transferred to the other.

I note with some surprise that, early in Mr. Wyndham's letter, my statement that the very common and relatively gross abnormalities of testis and epididymis found in these cases are probably a factor in the maldescent, and hence militate against response to hormones, is criticized, but later on a very similar remark of John Hunter's is said to have been made with "characteristic insight". It still seems a reasonable assumption to me.

There is, of course, considerable room for debate as to whether it is not wise to remove a unilateral abdominal testis which cannot be brought down—as is the practice of Sir Kenneth Fraser. My reasons for avoiding laparotomy are based on the following considerations: (i) that orchidopexy probably does not diminish the risk of malignancy in any particular individual; (ii) that malignancy rarely occurs; (iii) that laparotomy itself carries a small but definite mortality from late obstructions and other complications. If laparotomy becomes necessary for some other reason, I would certainly remove the testis. I am capable of persuasion to Sir Kenneth's and Mr. Wyndham's view in this regard, but if I were, I feel that I would then excise more than just the intraabdominal testes—in fact, all that appeared in any regard abnormal.

I must not trespass further on your space and patience, although several other points have been raised. This is a subject which can be relied upon to produce differing viewpoints. It is of importance that these should be reviewed from time to time.

Yours, etc.,

135 Macquarie Street,
Sydney.
September 18, 1961.

DAVID L. DEY.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED SEPTEMBER 2, 1961.¹

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism .. .. .	..	..	..	..	..	..	2	..	2
Amebiasis .. .. .	..	..	..	..	..	..	..	..	..
Ancylostomiasis .. .. .	..	..	2	..	..	..	1	..	3
Anthrax .. .. .	..	..	..	..	..	..	..	..	..
Bilharziasis .. .. .	..	..	..	..	..	..	..	..	..
Brucellosis	1	..	..	..	..	..	..	..	1
Cholera .. .. .	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus) .. .. .	..	..	..	..	..	..	1	..	1
Dengue .. .. .	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	1	17(14)	1	..	..	..	..	..	19
Diphtheria	1	..	..	..	..	..	..	..	1
Dysentery (Bacillary) .. .. .	..	1(1)	..	..	1(1)	..	..	..	2
Encephalitis .. .. .	..	..	1	..	..	..	..	..	1
Flariasis .. .. .	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice .. .. .	..	..	..	..	..	..	..	..	..
Hydatid .. .. .	..	..	..	..	..	..	..	..	..
Infective Hepatitis	88(30)	69(37)	24(5)	30(15)	4(4)	11(7)	3	9	238
Lead Poisoning .. .. .	..	..	..	..	..	..	..	..	..
Leprosy .. .. .	..	..	1	..	..	..	2	..	3
Leptospirosis .. .. .	..	..	..	..	..	..	..	..	..
Malaria .. .. .	..	..	..	..	..	..	..	..	..
Meningococcal Infection	1	..	..	..	..	..	..	..	1
Ophthalmia .. .. .	..	..	..	..	..	..	..	..	..
Ornithosis .. .. .	..	..	..	1(1)	..	..	..	..	1
Paratyphoid .. .. .	..	..	..	..	..	..	..	..	..
Plague .. .. .	..	..	..	..	..	..	..	..	..
Poliomyelitis	4(1)	..	1(1)	3(2)	..	..	..	..	8
Puerperal Fever	1(1)	1(1)	..	..	..	..	..	..	2
Rubella .. .. .	..	11(4)	..	..	6(6)	..	..	2	19
Salmonella Infection .. .. .	..	..	..	..	..	..	..	..	..
Scarlet Fever	4(1)	8(6)	..	6(4)	2(2)	..	..	1	21
Smallpox .. .. .	..	..	..	..	..	..	..	..	..
Tetanus .. .. .	..	..	..	..	1	..	..	..	1
Trachoma .. .. .	..	..	..	..	..	..	..	..	..
Trichinosis .. .. .	..	..	..	..	..	..	..	..	..
Tuberculosis	30(24)	18(16)	19(1)	1(1)	6(6)	..	1	..	76
Typhoid Fever .. .. .	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne) .. .. .	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne) .. .. .	..	..	..	..	..	..	..	..	..
Yellow Fever .. .. .	..	..	..	..	..	..	..	..	..

¹ Figures in parentheses are those for the metropolitan area.

Public Health.

POLICE OFFENCES (AMENDMENT) ACT, 1908, AS AMENDED, OF NEW SOUTH WALES.

THE Under Secretary, Chief Secretary's Department of New South Wales, has requested that publicity be given to the following proclamation, which was gazetted on September 1, 1961, applying Part VI of the *Police Offences (Amendment) Act* to hydromorphinol and five other drugs. The proclamation will come into effect on March 5, 1962.

PROCLAMATION.

(L.S.)

E. W. WOODWARD,
Governor:

I, Lieutenant-General Sir Eric Winslow Woodward, Governor of the State of New South Wales, with the advice of the Executive Council do, by this my Proclamation, declare that Part VI of the *Police Offences (Amendment) Act*, 1908, as amended, shall apply to:

Hydromorphinol (14-hydroxydihydromorphine), its salts, and any preparation, admixture, extract or other substance containing hydromorphinol;

Diampromide (N-[2-(methylphenethylamino) propyl]-propionanilide), its salts, and any preparation, admixture, extract or other substance containing diampromide;

Phenampromide (N-[2-(1-methylpiperid-2-yl) ethyl]-propionanilide, or N-(1-methyl-2-piperidinoethyl)-propionanilide), its salts, and any preparation, admixture, extract or other substance containing phenampromide;

Clonitazene (2-(p-chlorobenzyl)-1-diethylaminoethyl-5-nitrobenzimidazole), its salts, and any preparation, admixture, extract or other substance containing clonitazene;

Etonitazene (2-(p-ethoxybenzyl)-1-diethylaminoethyl-5-nitrobenzimidazole), its salts, and any preparation, admixture, extract or other substance containing etonitazene;

Phenoperidine (1-(3-hydroxy-3-phenylpropyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester), its salts, and any preparation, admixture, extract or other substance containing phenoperidine,

in the same manner as it applies to the drugs mentioned in paragraph (a) of subsection (2) of Section 18 of the said Act.

I hereby declare that this my Proclamation shall take effect on and from Monday, 5th March, 1962.

SIGNED AND SEALED this second day of August, One thousand nine hundred and sixty-one.

By His Excellency's Command,
C. A. KELLY.

GOD SAVE THE QUEEN!

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Dissevelt, Gerardus Johannes, M.B., B.S., 1960 (Univ. Sydney), 5 Broula Road, Wahroonga.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Hampson, Roger, M.B., B.S., 1961 (Univ. Sydney);
McLachlan, John, M.B., B.S., 1959 (Univ. Sydney);
Nathaniel, Rajah Lionel, M.B., B.S., 1960 (Univ. Sydney);
Nichols, Michael David Samuel, M.B., B.S., 1961 (Univ. Sydney);
Thong, Francis Khin-Yoong, M.B., B.S., 1957 (Univ. Sydney).

Deaths.

THE following deaths have been announced:

MACKAY.—Robert Mitchell Mackay, on September 4, 1961, at Palm Beach, New South Wales.

CURTIS.—George Cyprian Curtis, on September 15, 1961, at Double Bay.

GEOFFROY.—Alfred John Geoffroy, on September 19, 1961, at Croydon Park, N.S.W.

Diary for the Month.

- OCTOBER 3.—New South Wales Branch, B.M.A.: Council Quarterly.
- OCTOBER 4.—Western Australian Branch, B.M.A.: Branch Council.
- OCTOBER 5.—South Australian Branch, B.M.A.: Council Meeting.
- OCTOBER 6.—Queensland Branch, B.M.A.: General Meeting in conjunction with the South Coast Local Association.
- OCTOBER 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee; Organization and Science Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): Medical Officers to Sydney City Council. All contract practice appointments in New South Wales. Members are requested to consult the Medical Secretary before undertaking practice in dwellings owned by the Housing Commission.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations, other than those normally used by the Journal, and not to underline either words or phrases.

Authors of papers are asked to state for inclusion in the title their principal qualifications as well as their relevant appointment and/or the unit, hospital or department from which the paper comes.

References to articles and books should be carefully checked. In a reference to an article in a journal the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of article. In a reference to a book the following information should be given: surname of author, initials of author, year of publication, full title of book, publisher, place of publication, page number (where relevant). The abbreviations used for the titles of journals are those of the list known as "World Medical Periodicals" (published by the World Medical Association). If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full data in each instance.

Authors submitting illustrations are asked, if possible, to provide the originals (not photographic copies) of line drawings, graphs and diagrams, and prints from the original negatives of photomicrographs. Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary is stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: 68-2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this Journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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